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"PITUITRIN"

Landmarks in its History

1895 Oliver and Schäfer discover that extract of the pituitary gland increases blood pressure (*Journal of Physiology*, xviii, 277).

1898 Howell announces that the pressor principle can only be obtained from the posterior lobe of the gland (*Journ. of Experimental Medicine*, iii, 245).

1905 Parke, Davis & Co. prepare posterior lobe extract, and issue same to co-workers in the Department of Experimental Medicine in U.S.A. and London.

1906 A London worker reports privately (April 3) "that the action of P., D. & Co.'s posterior lobe extract is similar to that of adrenalin, but more prolonged in effect," this result being confirmed later by same worker (June 29).

Parke, Davis & Co. issue laboratory data regarding posterior lobe extract, dealing with the toxicity, blanching experiments, effect on blood pressure, pulse, and flow of urine, illustrated with numerous kymographic tracings.

Dale discovers that contraction of uterus takes place when extract of dried ox-pituitary is given intravenously (*Journ. of Physiology*, May 31).

1907 Aldrich, of Parke, Davis & Co.'s Research Laboratory, publishes process by which the solution of the posterior lobe principle (later known as "Pituitrin") is obtained (*Journal American Physiological Society*, December).

1908 Houghton and Merrill report to the annual meeting of the American Medical Association (June); and Lockhart-Mummery and Symes to annual meeting of the British Medical Association (July) on the properties of "Pituitrin."

Blair Bell describes action of infundibular extract on uterus (*Liverpool Medical and Chirurgical Journal*, July).

Professor Pal, Vienna, lectures on the effect of "Pituitrin" on arterial pressure (December); lecture reported with numerous tracings (*Wien. med. Woch.*, Jan. 16, 1909).

1909 Blair Bell and Hick on Pituitary Extract (*B.M.J.*, Feb. 27).

Von Frankl-Hochwart and Froehlich report contraction of uterus by "Pituitrin" (*Wien. klin. Woch.*, July 8).

Blair Bell, on clinical application of pituitary extract in obstetrical cases (*B.M.J.*, November 13).

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A British Medical Association Lecture
ON
THE MEDICAL WITNESS.*
BY
H. H. JOY, K.C.

I WOULD like to preface my remarks by emphasizing the immense responsibility which attaches to the medical witness in connexion with cases of every sort in the various courts of justice involving medical evidence. In some instances the medical questions involved are comparatively simple, and the lay tribunal can to a certain extent exercise an independent judgement upon them. But, speaking generally, the doctor is almost in the position of a man who is interpreting for the court from some foreign language, and accordingly it is obviously his paramount duty to be scrupulously fair and frank. I would like to add that, in the opinion of those best qualified to judge, the medical witnesses as a class prove worthy of the high confidence reposed in them. It is interesting to notice in this connexion that the rules of evidence which apply to ordinary witnesses have had to be modified in an important respect in favour of the medical witness. Speaking generally, the ordinary witness may only give evidence as to facts, and from these facts the court draws its own conclusions; but the medical witness is permitted to give his opinion upon the facts which he has observed, or which are submitted to him—that is, he may state what, in his view, is the proper inference and conclusion to be drawn from a given set of facts; in other words, the court entrusts him with the duty of interpreting those facts, and this at once shows what a responsible and powerful position he occupies.

If the nature of the case to which a doctor is called is such as to suggest to him the possibility of ultimately being required to give evidence—it may be before a coroner or a civil or criminal court—he should equip himself from the start for such an eventuality. I advise him therefore in such a case to observe and record most fully everything that he finds. It is surprising how often great importance afterwards attaches to matters which at the time may not have seemed important. A doctor's connexion with a case may begin only at a later stage—namely, when he is asked to examine with a view to being called as a witness; he may probably be furnished with views or theories by the party engaging his services; he should keep an open mind; he should make his examination fully first and then see to what conclusion it leads; if he cannot to his own satisfaction support the case let him say so plainly; if he can, let him be careful to include in his "case note" everything which really affects his conclusion. It may be a long time before he finds himself in the witness-box; and when there he may refresh his memory from his note; but he may also be asked to show it to the counsel for the other side; obviously, if something to which in his evidence he has attached importance is not to be found in the note made at the time, he lays himself open to criticism. As regards the making of the note, dictation will do provided he takes the precaution to initial it, and he should see that it is dated. The note should be made at, or as nearly as possible at, the time of the examination; the witness should have the original note with him. But the doctor should not make a habit of using this "note" too liberally—any "refreshing" should be done before entering the witness-box; a witness is not likely to create such a good impression on the court if he gives the appearance of not knowing the facts.

Not infrequently, I suppose, you may wish to apply certain tests when making an examination, to help you to decide whether a man's condition is really the consequence of an injury or is due to disease; it is not always easy to know what to do. Each case must depend largely, of course, on its own special circumstances, but I think I may say this much at any rate: if there is some test which in your view is really essential to forming a sound conclusion, but is perhaps lengthy and irksome to the patient, you should at least ask him to consent to it, otherwise you may find, when in the witness-box it is put to you, "Isn't so-and-so an accepted test of the presence of such disease?" you have to say Yes; and when you are asked why you did not apply it, you can say, "Well, I asked permission to do so, but the man objected and I could do no more." It will at any rate show that you were not avoiding it for fear it might have upset your view of the case. Such difficulties are largely, I think, obviated in cases under the Workmen's Compensation Act, because that Act contains provisions for what is in effect a compulsory examination of the man on behalf of the employer, and further provides that if he refuses to submit to or in any way obstructs such examination his right to compensation may be suspended until he has submitted; so in cases under that Act you would report to the employer's solicitors that you were not able to make what you considered a proper examination, and the court would then have to decide whether the man was refusing to submit to or was obstructing the examination. In connexion with examinations under that Act, you may like to know that the House of Lords has held that there is no absolute right in the workman to have his own doctor present at such examination, so if a workman refuses to submit himself unless his own doctor be present, it is for the court to say whether his refusal is reasonable or not; so that from your point of view you need not worry over any questions of etiquette as regards the attendance of the man's own doctor, though doubtless you would seldom raise objection to his being present.

When the case is one where you have to rely mainly or wholly upon subjective symptoms, test the man's credibility during your preliminary examination by such devices as appear best to you, so as to be able when in the witness-box to fortify your conclusions that he was or was not exaggerating his symptoms or perhaps malingering.

Sometimes doctors from either side meet by arrangement of the parties for an examination of the applicant, with the hope of agreeing, for instance, as to whether there is any incapacity or whether the condition is the result of accident or disease, and so saving litigation. This is an excellent thing to do (except from counsel's point of view); but my own personal opinion is that on all such occasions the discussion should by arrangement be "without prejudice," so that neither doctor can be examined or cross-examined, if the case should eventually come to court, as to what was or what was not said by one to the other. The failure to take this precaution has led to some unpleasant personal conflicts of recollection in the witness-box. Do not give your solicitor a stronger report than you can really maintain in the witness-box. For instance, if your report says that a man is a malingerer, there should be no risk of having to climb down and say that he is not intentionally exaggerating. Remember that counsel opens his case largely from your report, and it is a fatal thing to open it too high and see it being painfully brought down. Counsel's brief is almost invariably marked with a fee of 3 and 1, or 5 and 1, or whatever else he can get and 1. The 1 indicates a conference. When circumstances permit make a point of attending that conference; counsel can then get a far better grip of the medical aspects from a talk with you; he can also discuss with you the nature of the points which the other side is likely to put forward, and get your observations upon them. Also do all you can to get hold of the correct version of the facts—a by no means easy task sometimes, but obviously a most essential matter. In hospital cases ask to see the notes; they are not strictly evidence unless produced by the doctor who made them (who has often gone away), but the Court of Appeal has expressed the view that they should be at the disposal of each side. Of course, if in the progress of the case facts new to you come out which cause you to modify or even alter your views you will naturally have to act accordingly if you go into the witness-box; but in such a case take care to let counsel know how the new or altered facts affect your view. I think I can best explain my meaning by an illustration.

You have been called in to examine a case of a man who has some time ago received a blow over the spinal cord, and is now exhibiting symptoms of paralysis; you are told that the blow was at point A_1 and you see the symptoms of loss

* Delivered before the South Staffordshire Division, February 3rd, 1925.

of power are in the appropriate parts corresponding with an injury at that precise point; you have therefore concluded cause and effect, and were prepared to give evidence accordingly. During the case the doctor is called who saw the man while the mark of the blow was still to be seen, and he locates it at a spot which would not affect the paralysed part. You cannot, of course, any longer rely upon the opinion you had formed; nor can you give evidence—if you give it at all—without qualifying it by saying that "if the seat of injury was really so high up as Dr. So-and-so says, then I must admit it would not be reflected in the part now paralysed, and therefore is not the cause of it." Now counsel or the solicitor conducting the case would almost certainly not know what a vital change of affairs would result from Dr. So-and-so's evidence as to the precise spot, and you must at once explain to him what has happened, or else he will find himself hopelessly involved.

Now let us assume a case has reached the court. You are going to give evidence for the defendant's side. Please do not think it is enough to be on call by the 'phone to hurry round when your evidence is wanted. In the great majority of cases it is most essential that you should hear all the evidence, and especially, of course, the medical evidence; you may thus obtain some entirely fresh light upon the matter, and you can then, with your special skill and knowledge, be enormously helpful to your counsel; and further, when you go into the witness-box you will know exactly how the case stands and what you have to meet, and will be forewarned against the line of cross-examination.

As regards the actual giving of your evidence I would make a suggestion or two. Remember that the simpler the language of the expert the greater is his effect upon the court. In a case before a judge and jury a doctor stated in his evidence that "on examining the prosecutor he found him suffering from a severe contusion of the integuments under the left orbit, with great extravasation of blood and ecchymosis in the surrounding cellular tissue, which was in a tumefied state; there was also considerable abrasion of the cuticle." The judge: "I suppose you mean that he had a black eye?" The doctor: "Yes." The judge: "Then why not say so?"

Scientific evidence should therefore be as unscientific as possible when given in court. Take care to have ascertained beforehand what the real *issues* in the case are. I am afraid it does not always occur to those who engage your services that it is necessary for you to know the precise issues, but it almost always is, and you should see that you are fully informed. To take one illustration from an actual case. A man has had nystagmus which has incapacitated him, and he has received compensation. He "recovers," and his employers claim to stop his compensation, alleging that any incapacity due to "the so-called accident" has ceased. He claims a continuance of the compensation, and it is necessary for him to show that his incapacity (that is, in this case inability to resume work in the mine) is due in one way or other to the so-called accident—namely, the disease of nystagmus. The doctors called on his side agree that he is now free from nystagmus, but say that it will probably recur if he again works below; but they omit to say that the danger of that recurrence is due wholly or partly to the attack that he has had. He loses his case; whereas if they could have said, "There is an increased susceptibility consequent on the previous attack," the man would have succeeded.

In many of the matters that come into court under the Workmen's Compensation Act the question is whether the injured man is now sufficiently recovered to do some work. In these cases you are asked to give evidence as to his capacity for work or as to what work is suitable for him; you should therefore ascertain what work it is that the employer is suggesting as suitable, and go and get personal knowledge of the actual work and of the surrounding conditions. Counsel for the man cross-examines you somewhat in this fashion: "Don't you think for a man with impaired sight the work offered is unsuitable, because of his having to go about where machinery is in motion, or chips flying about?"—or whatever it is. If you can say, "No; I have seen the place myself under ordinary working conditions, and the job is quite suitable for him," you enormously increase the value of your evidence. Again, I would have you remember that, though the medical aspect of the case is perfectly plain to you, it is seldom plain to the tribunal; so that you should give your evidence in a way which will commend itself and be intelligible to the court: give in as simple language as you can the data upon which you rely and the reasons for your conclusions—for example, "When I find this and this followed by that, I am certain the cause is so-and-so." The judge says to himself, "This fellow knows his job, and I can see his line of reasoning—it strikes me as sound." When you are being cross-examined keep your temper, for the gentle art of cross-examination embraces infinite styles and varieties, and some, I am sure, must be enough to try the temper of a saint. Listen carefully to the question; beware of double questions, and if you do not understand what is put to you, say so and get it made intelligible to you before you answer. When being cross-examined do not merely answer Yes or No to medical questions; such questions are put to you presumably—at least they should be—because the witnesses for the other side are going to give them as their views, so explain your reasons for not accepting what was put to you. Avoid arguing with the cross-examiner; if there is anything you consider really objectionable in a question or in the way of putting it appeal to the judge—you are entitled to be protected from unfair treatment—but, of course, don't do that unless it is really bad. If an extract from a book is cited to you in cross-examination, remember that you are fully entitled to see the passage and its context before you give your answer; it not infrequently happens that when investigated with its context the point which was intended to be made against you wholly collapses; or the quotation may be from a standard work now out of date; or from an old edition of a work, in the recent edition of which a different view is given; or it may happen (indeed, has) that the passage was one cited by the writer of the book for the purpose of contradicting it or exposing its fallacy. But when you know that you are giving a view which is really contrary to the usually accepted view, be ready to fortify it by your special experience or other good ground.

Some doctors, I believe, are so rash as to have themselves committed their views to writing. If faced with some earlier observation of your own on a point on which you have really altered your view, do not try to camouflage the two views, but say why you have changed your mind in the light of further experience or whatever the cause was. I think myself that when such a situation is dealt with fairly by the witness in that way the effect on the judge's mind is to confirm rather than detract from the value of his evidence. The judge knows as well as you do that science is never final—experience, new discoveries, increased research cause the modification or reversal of views previously held; and while the judge respects a man who is strong enough to say that he has changed his mind in the light of further experience, he necessarily views with mistrust the man who trys to explain away or reconcile the two opinions. When, as sometimes happens, you are going to give your opinion in the witness-box that a man was a malingerer, you must be prepared for awkward questions in cross-examination and be armed at all points. Of course, you sometimes are provided with fairly conclusive evidence—for instance, a man has had an accident some time ago and injured some muscles of his back. He alleges that it is still stiff and that he cannot stoop without great pain. You get him to describe his woes, and listen most sympathetically to all he has to say, and soon get an inkling how far he is to be believed. Then during a friendly chat you "accidentally" drop the handkerchief with which you are wiping your glasses, and of course, if he politely bends down and picks it up without a groan you probably will not need to stay much longer; but it is seldom, I suppose, that you get such easy positive proof.

Let me give you an instance of an actual experience in this connexion. Counsel was cross-examining to try and prove that a man really was suffering from neurasthenia, and that he exhibited certain symptoms of it. The doctor says, "No, he is malingering neurasthenia." Counsel:

"Do you say that those symptoms can be voluntarily assumed?" Doctor: "Yes, I do." Counsel then asked him to give a demonstration of voluntary sweating. This so disconcerted him that he at once broke out into obvious perspiration, and so appeared effectively to establish his assertion, though one wonders whether it was quite a case of voluntarily sweating on his part.

If, as I suppose must sometimes be the case even with doctors, in cross-examination you find yourself being cross-examined on a subject on which you have no particular knowledge, do not try to answer; say you cannot deal with that; or, if you like, say what I heard said in court by a well known surgeon, indicating a well known physician who was going to give evidence also: "You'd better put that question to the finished article that follows me; I'm only a surgeon." I assure you the court will esteem you the more highly for not pretending to have knowledge that you do not possess. I need hardly advise you to avoid making any sort of attack upon the other medical witnesses or giving the impression that you consider yourself far superior. You probably know what Max O'Rell says of American experts—"Every fellow wishes the other fellow to think himself a devil of a fellow."

It is often a matter of amazement to counsel, and must even sometimes be so to yourselves, to find how completely doctors differ, or appear to differ, from each other in the evidence that they give about a case. Presumably both sides cannot be right—though I believe that in the great majority of such cases both sides are honestly giving their opinion; the reasons for this difference are no doubt various. Perhaps the most influential one is that of unconscious partisanship. You have become identified, as it were, with the one party: you are for his side; you cannot help noticing particularly and perhaps magnifying the points that assist your side's case; you overlook or fail to give due weight to points that do not fit in so well. The ideal medical witness should be on guard against this from the beginning; he should remember that he has probably approached the case at the very start with one side's views and wishes placed before him, and not the other's; he begins by looking for something, expecting to find it, instead of looking—with a quite open mind—to see what he does find.

Or, again, he is in the witness-box, is being cross-examined; he feels that it is "up to" him to justify the confidence placed in him by his side; it is human nature to want to "play up" accordingly, and almost unconsciously he adds a little or omits a little; he cannot bear the idea of "letting down" his side, or being what might seem to them "disloyal"; and when faced with a point which he sees might be unfavourable, he screws himself up just a little bit to enable him to discount it, justifying it to himself perhaps by saying, "Well, I know my man really is in the right, and is entitled to succeed." A clever cross-examiner will comprehend your state of mind, and try to get you to go a little further, and still a little further, and in the end you have to go too far and the damage is done.

Sometimes the cause for this difference of views is of quite another kind: there may be a real division in the profession upon the point under discussion—some think this, some that. Here is a chance for you to help counsel. As a rule doctors know something of each other's views and theories. I remember once in a case of nystagmus there occurred a remarkable difference of evidence. The question was, Had the man nystagmus or had he not? Eminent witnesses on my side said he had; an equally eminent witness on the other said he had not. Happily the mystery was solved: on a tip from my side the latter was asked what he meant by having nystagmus, and he answered that he admitted no nystagmus where the symptom of oscillation of the eyeballs was not present—little he cared for the extended definition of that disease in the Workmen's Compensation Act. Again, it may be in some cases that the respective doctors may have made their examination at widely different times, and the patient's condition may have essentially differed; no doubt various other reasons will suggest themselves to your minds. I mention these matters to impress upon you that you can frequently be of great assistance to counsel, not only by your giving evidence in the witness-box, but by closely following the whole evidence and giving advice to him on points of this kind which may be invaluable for cross-examination. May I add, when possible, jot down your "tips" on paper and let him have them; it is not at all easy to take them in from a whispered conversation, while perhaps counsel is on his feet examining or cross-examining. You must remember that rarely, if ever, has counsel sufficient medical knowledge of his own to hope to cross-examine a medical expert effectively; and rarely, too, I am glad to say, has he any ground for cross-examining such a witness as to honesty or credibility; and so his only chance of making any impression is by being supplied by you with material whereby he may throw some new light on the case, or lay bare the reason why the doctor under examination may have been misled into forming such an erroneous view of the case.

If you make a deduction from certain stated facts, be quite sure there is no flaw in your deduction. No less a person than a very learned judge whose face was an exact counterpart of that of George III on the coins, on one occasion when counsel was inviting a jury to infer a certain consequence from the likeness of two people to each other, interrupted him, saying, "Don't dwell too long on that. It has been said I am the son of His late Majesty George III because of my likeness to him; all I can say upon that subject is this: George III was never in Scotland, and my mother was never out of it; so if you can make me out to be his son, do. Now go on." Counsel, in a stage whisper, for the jury to hear, to his neighbour: "But they might have met at the border!"

When you are being cross-examined be on the look-out for questions which assume that you have said something which you have not said, or that something has been proved which has not been proved, and for questions to which you cannot properly answer Yes or No—for example, "Have you given up beating your wife?" Considerable latitude is allowed to the cross-examiner, but he has no right to put unfair questions or make inaccurate statements, and the witness is fully entitled to point out the inaccuracy, and, as I have said—in extreme cases—to appeal to the judge if he thinks the question unfair. When you feel that you have scored a point and floored the cross-examiner with your answer, be content—do not try to kick him as well. That proceeding is apt sometimes to do harm. Your parting kick perhaps discloses something that provides him with a new weapon. So let well alone; remember the epitaph on the tombstone of one who failed to do so: "I was well, I wanted to feel better; I took physic, and here I am."

Bear in mind always that your function is to assist the court to arrive at what you believe to be a correct conclusion upon the medical question in the case, and you will do that most effectively by not showing any resentment at cross-examination, or trying to score off counsel personally, but by answering the questions courteously and simply; and, as opportunity arises, giving the reason why you cannot accept this or that suggestion that is put to you. So long as the medical witness conducts himself as an impartial expert giving assistance to the court, no counsel will gain any advantage by attacking him; it is only where he shows himself biased, or gives the impression that he is keeping something back, that he really exposes himself to effective cross-examination.

A medical witness in the box generally gives his evidence in chief with greater effect if he is allowed to give it in his own way; it is enough as a rule for counsel to say, "You examined Mr. —— on such a day; what did you find?" Then you state all that you regard as of importance, and he then asks for your conclusions. This is far preferable to the half-and-half sort of way that so often occurs where counsel asks about this and that, and then the doctor is left wondering whether or not to mention other matters that have not been specifically asked. When that position does occur I advise the doctor to go on and complete all that he thinks bears on the point; but such misunderstandings seldom arise when they have met previously at conference. Again, when you are giving your evidence for the defendants—that is, after the doctors for the plaintiff have been in the witness-box—you should be prepared for

your counsel to travel somewhat freely beyond your mere proof or report, because he will almost certainly ask you to give to the court your views upon the points made by the doctors on the other side; he will probably say, "Now, doctor, you heard Mr. B. say he thought this was a case of so-and-so; what do you say about that?" Then is your opportunity to explain why you differ, and to endeavour to do so in a way that will convince the court that your reasons are sound. By doing this you have incidentally made it difficult for the counsel who has to cross-examine you, because you have dealt in advance with most of his material; and if he still persists in putting it the judge gets a bit restive and says to him, "The doctor has already explained that; what's the good of merely putting it to him over again?"

I would like, if time permits, to say a word about the position of doctors as regards what is somewhat vaguely described as "privilege," in so far as it concerns cases that come into the courts. For a witness in court there is no privilege recognized by the law as regards facts which the doctor may have observed or with which he has become acquainted in his capacity as medical attendant. Obviously there cannot be, because it would conflict often with statute law and nearly always with the administration of justice. As to the former, I may instance the Notification of Diseases Act and the Notification of Births Act. As to civil and criminal proceedings, it is apparent that over and over again the ends of justice would be defeated if doctors were allowed to decline, when in the box, to give evidence of the facts which had become known to them.

One can easily understand that in many cases it must be very unpleasant for a doctor to find himself asked to disclose information about his patients; but I fear that he can do no more than appeal to the judge to know whether he is bound to answer. The judge will say Yes; but the doctor will feel that he has done what he can to preserve the confidential relationship between himself and his patient. If he persisted in refusing to answer he would be liable to be committed for contempt of court. Incidentally I may mention that what a witness says in the witness-box is privileged, which means that it cannot be made the subject of an action for slander.

Now may I just try to give you a short summary of my suggestions?

Approach the case with an open mind.

Your examination should be complete—not limited (except in obvious cases) to the part affected or injured, but generally, of the systems and organs; it may later prove to be as important to say that such and such symptoms were absent as that some others were present.

Investigate carefully all the objective symptoms, and if the man complains of some that you do not then see—for example, sickness or passing blood—try to get a chance of seeing them; satisfy yourself as best you can about the subjective ones; make and keep careful records, and date them; and make as sure as you can that you have got the facts right.

When you make your report or give your proof, let it be as intelligible as circumstances permit to the counsel who is to have it: give the dates of your examinations, what you observed on the several occasions (if more than one), and then your conclusions and the reasons for them; ascertain what are the issues or points in the case, and show the bearing of the medical evidence upon them; attend if possible at a conference with counsel, and tell him what are the debatable features, and the probable criticisms or attacks to be expected from the other side.

When the case comes on, be there, stay there, and listen to the opening and the evidence, and jot down for counsel any tips or comments that occur to you. Diagnose the judge, and see what treatment he needs; then give it to him when in the witness-box—for example, clear his mind of some fallacy you have seen him absorb.

When in the witness-box speak plainly and not too fast, and as much as you can *towards* the judge; it is a good thing as a rule to adjust your pace to the judge's note; watch his pen; keep cool; do not let counsel make you lose your temper; do not argue with him; do not answer questions without being sure you understand them; and always remember that the judge regards you as there to assist the court in arriving at the true view, and to give your opinions and make your criticisms honestly and impartially. Try to convey to the judge a clear and definite impression of what your decision would be; he wants you to enable him to arrive at a right and a real conclusion, and not to feel that he ought to give a verdict such as a jury once gave where the doctor at an inquest flirted alike with lightning and foul play as being the cause of death, and the bewildered jury's verdict was "Death from a visitation of God under suspicious circumstances."

An Address
ON
CERTAIN PHASES OF LEUCOCYTE ACTIVITY.

DELIVERED TO THE SHEFFIELD MEDICO-CHIRURGICAL SOCIETY

BY

C. J. BOND, C.M.G., F.R.C.S.,
LEICESTER.

SECTION I.—PATHOLOGICAL.

IN an article published in the BRITISH MEDICAL JOURNAL (January 11th, 1919) it was shown that when washed red cells are ground up, a drop of the suspension of the washed and sedimented debris, when incubated (in a closed cell) with two or three drops of the freshly drawn blood from the same individual, exercises a leucotoxic effect on the native leucocytes varying in intensity according to the degree of concentration of the red cell debris in the incubated blood. The leucocytes emigrate very sparsely from the incubated clot, and those cells which adhere to the slide show marked signs of arrested activity, and cytolysis.

Malaria and Leucocytic Activity.

In *The Leucocyte in Health and Disease* (London, 1904) a description is given of the leucocyte films from the incubated blood of a malaria patient taken during the pyrexial and the apyrexial stages of the disease respectively.

In blood obtained during the rigor or pyrexial stage emigration is very scanty, and the cells are spheroidal and show the cytolytic changes characteristic of poisoned cells. If, however, the same clot be detached from the slide, washed in normal saline, and reincubated on a fresh slide, a much more copious emigration of active cells takes place from the same clot after the removal of the serum. This proves that the scanty emigration in the first instance is not wholly dependent on a reduction in numbers of the white cells.

The findings of different observers as to a rise or fall in the mononuclear and polymorph cell count in various phases of malaria, and in blood drawn from different parts of the body, vary a good deal. The fact, however, that the emigration is very scanty from the incubated blood clot, taken during the pyrexial stage, while it is active from the same clot after the serum is washed away, strongly suggests that the inhibitory influence is in some way due to the presence of the blood serum and not to any lack of leucocytes. If blood be taken from the same patient during the apyrexial stage, normal emigration occurs from the incubated clot.

Induced Malaria.

The induction of malaria by the injection of blood from an infected patient in cases of general paralysis, for therapeutic purposes, has enabled us to carry out observations on malarial patients on a more definite plan.

The emigration picture is first obtained by incubating the blood from a case of general paralysis immediately before the treatment is commenced. A second emigration picture is taken during one or more of the dozen or so rigors which usually follow the injection of the infected blood. A third emigration picture is taken during the stage of treatment by quinine, and a fourth after recovery from the malarial infection. The character of the leucocytic

emigration in this induced form of the disease follows the same lines as in the natural disease—that is, inhibition of emigration during the pyrexial stage and normal activity during the apyrexial stage; and also after recovery by quinine treatment.

Paroxysmal Haemoglobinuria.

I have recently had an opportunity of studying the same problem in a case of paroxysmal haemoglobinuria in a child of 3, in whom, although the paroxysms were accompanied by malaise and the passage of a large amount of haemoglobin in the urine, no rigors and no marked rise of temperature occurred.

The emigration picture obtained from blood during the paroxysm showed only a few leucocytes, surrounded by threads of fibrin and red cells in various stages of degeneration. When the clot was washed in saline and reincubated a much larger crop of active cells was obtained. In the convalescent periods, during which the urine was free from haemoglobin, the emigration picture gradually returned to a more normal condition.

Eason[1] states that a slight leucocytosis is generally present during the paroxysm. If this be so, the failure of the leucocytes to emigrate from the clot cannot be due to a scarcity of these cells in the circulating blood. In order to test this point and to ascertain whether the blood serum during the paroxysm is leucotoxic, three drops of my own blood were incubated in a closed cell with one drop of the patient's blood serum diluted with normal saline. The effect on my own leucocytes, though slightly inhibitory, was not very marked. When, however, my washed red cells, previously treated for one hour with the same serum, diluted with normal saline, were incubated (after rewashing) with my own blood, a striking effect was produced. Only a very scanty emigration of damaged leucocytes occurred, and many of these cells had debris of red cells hanging to them. In a control film, in which the same washed red cells were used without previous treatment with the haemoglobinuric serum, a good emigration field of normal cells was obtained.

This observation shows that the serum of the haemoglobinuric patient exercises its effect on foreign as well as native red cells, at room temperature *in vitro*, and that when cells so treated are incubated (after rewashing) with foreign blood, the red cells apart from the serum acquire a leucotoxic character. This observation is in harmony with the hypothesis put forward by Eason, Landsteiner, and other observers, that the recurring attacks of haemoglobinuria are due to the presence in the blood of a substance (amboceptor) which at a low temperature attaches itself to the red cells. When the local or general temperature of the blood rises, this substance acts as an intermediary body, and links the complement normally present in the plasma to the red cells, and thus brings about haemolysis.

These facts, taken in conjunction with our previous observations on malarial blood, suggest that disintegrated red cells, when damaged, either by invasion by the malaria parasite or as the result of the action of some haemolytic substance, as in haemoglobinuria, do exercise a profound leucotoxic effect *in vitro*; and further, this leucotoxic substance, whatever it be, only apparently becomes leucotoxic after it has been linked up with the red cells of the patient.

In diseases like malaria and haemoglobinuria, in which a mass destruction of red cells occurs periodically, leucotoxic substances are present in the blood serum during the acute phases of the disease. The removal of the blood serum from the clot *in vitro*, and the restoration of the serum to normality during the recovery stages *in vivo*, removes the inhibitory influence, whatever it be, which prevents the emigration of the leucocytes, and which, if present in a more pronounced form, brings about the death of the emigrated cells.

Leucocytic Emigration in Pneumonia.

It will readily be recognized that the emigration picture in diseases which are characterized by a mass destruction of red cells will probably be very different from the emigration picture seen in other diseases, especially those of bacterial origin. In pneumonia, for instance, in the acute febrile stage, the carpet of leucocytes which covers the floor of the cell in which the blood is incubated is a thick one, the cells are very active, and a large quantity of iodophil substance is liberated. At the same time the increased leucocytosis which is present in acute pneumonia must be borne in mind.

In this connexion some observations by Dr. Gardner-Medwin[2] suggest that a leucopenia is actually present in the general blood stream during the early days of an attack of acute pneumonia, but that this is succeeded by a leucocytosis at a later stage. However this may be, the emigration picture from incubated blood in pneumonia in the acute stage is a striking one, and is in marked contrast to that seen in malaria and in paroxysmal haemoglobinuria. It may be that in paroxysmal haemoglobinuria a more extreme form exists of a condition ordinarily present in many other diseases (as in pneumonia), where red cells are agglutinated to, and undergo ingestion by, leucocytes in considerable numbers. These conditions can be so modified experimentally by removing the blood serum from the clot that the emigrating leucocytes can be induced to agglutinate and ingest washed native red cells on a wholesale scale.

Leucocytic "Aggressiveness."

If the red clot from which the first crop of leucocytes has been obtained be washed in normal saline to remove the blood serum, and reincubated on a fresh slide with a drop of a suspension of the washed red cells from the blood of the same pneumonia patient, the same phagocytic activity—that is, the aggressiveness—of the same leucocytes to their own washed and native red cells will be much more marked. Almost every leucocyte will be surrounded by a number of adherent red cells, and many will contain one or more ingested erythrocytes. This heightened "aggressiveness" to red cells on the part of leucocytes in the washed clot is not wholly specific in character—that is, it is not limited to native red cells; it extends to the red cells of other individuals, and to non-human red cells. Thus, washed red cells from certain individual sheep, which are sufficiently toxic to inhibit emigration and poison the leucocytes when incubated with human blood, will be readily ingested by the same leucocytes after the removal of the serum from the washed clot when reincubated on a fresh slide.

Moreover, this altered relationship between red cells and leucocytes in a disease like pneumonia may be brought about in normal blood (*in vitro*) by treating the washed red cells of one individual with the blood serum of another individual, or with the blood serum of the sheep, under certain conditions. After rewashing the clot red cells so treated may be readily agglutinated to and ingested by human leucocytes, whereas previously they produced no reaction on the part of these cells, or were so leucotoxic as to prevent emigration.

These and other facts suggest that it is some change on the surface of the red cell which brings about the altered attitude on the part of the leucocytes. We shall consider later whether, in addition to the deposition of this additive substance, some other substance may also not be removed, and whether by this process of addition and subtraction a profound chemical change may not be brought about in or on the surface of the red cell.

The Spleen and Leucocytic Stimulation.

We may regard the lacunar spaces in the spleen and the backwaters in the circulation as regions in which this aggressive action of the leucocytes on the red cells reaches a high level. Thus, in a case of enlarged spleen, in a man (also the subject of syphilis, with a history of previous malaria) in whom the spleen was removed by operation, serum from blood drawn from the finger—that is, the general circulation—when incubated with my own leucocytes and examined under dark-ground illumination, gave an emigration picture in which the individual leucocytes showed only moderate activity, while serum from blood taken from the splenic vein at the time of operation and incubated in the same way had a much more marked stimulatory effect, and greatly increased the pseudopodial activity of my leucocytes.

This comparative observation on serum from the general and the splenic circulation confirms the previous statement that substances which are capable of stimulating the

aggressive activity of leucocytes towards red cells are present in the blood in situations and in organs where, normally, red cells are undergoing disintegration.

In an interesting article on the spleen[3] Barcroft has described that organ as a reservoir from which large numbers of red cells are thrown into the circulation under certain conditions. The observations just recorded seem to suggest that substances having a leuco-stimulating character are present in the blood after it has traversed the splenic tissues. It may probably be that, as with bacteria so with red cells, a previous opsonization of the red cells by the blood serum is necessary to enable the leucocytes to ingest them.

It seems clear, however, that it is possible to reduce the leucotoxicity of a given sample of washed red cells *in vitro*, not only by treatment with an appropriate serum, but also by treatment with certain chemical substances.[4] Further, it is possible to increase the "aggressiveness" of the leucocytes to both native and foreign red cells *in vitro*, just as occurs irregularly in vaccine therapy, and with more uniformity through the influence of a previous infection, as in those diseases in which one attack confers subsequent immunity.

SECTION II.—PHYSIOLOGICAL.

The observations now to be recorded are concerned with the chemical and physical changes which can be observed in leucocytes as the result of, or in association with, the so-called process of stimulation.

One of the earliest signs of commencing activity shown by the white blood cells when removed from the circulation and incubated outside the body is a vibratory movement of the cell granules. This "boiling appearance" is seen in all varieties of leucocytes, but more in some kinds than in others. It may continue under favourable conditions for some hours, and as the liquefaction of the cell substance commences the amplitude of the granular movement increases. At a later stage it slows down, and finally ceases.

If a leucocyte film be prepared from incubated blood in a closed glass cell, the active cells which form a carpet on the floor of the cell do not, for the most part, stain with a 1/2 per cent. solution of ruthenamine chloride in normal saline; or, as this reagent is called, ruthenium red. A few odd leucocytes may show nuclear lobes of a rosy pink colour, but the great majority of the cell nuclei remain unstained. If the film is treated, however, with a 1 per cent. solution of iodine in normal saline, and is then washed in the saline, the majority of the cell nuclei will quickly stain with the ruthenium red. It is possible to bring about the same result by incubating the film in normal saline through which air is frequently bubbled, but the oxidation process takes one and a half to two hours before the cells will react to the stain.

If the film be treated with a weaker solution of iodine (1/2 per cent. in normal saline) for a few seconds only (four to twelve), and the iodine be then quickly washed away, and the film (covered with normal saline) be placed in the incubator for a few minutes, many of the cells will be seen on examination to be exuding colourless droplets. Some of these globules remain attached to the cell for a time, and then gradually dissolve in the surrounding medium. These droplets are composed of substances some of which have a strong avidity for iodine, and stain with it a pinkish-mauve, or, when more concentrated, a port-wine colour. If to the film so treated with a wash of weak iodine the solution of ruthenium red be added, many of the cells still remain unstained. For the most part it is the cells to which these iodophil droplets are attached which do *not* stain with the ruthenium red. The cells which show the pink-coloured nuclei have probably passed through the first stage of partial oxidation, and have reached the later stage in which the nucleus has become exposed by the removal of the lecithin coat, and under these conditions the nuclear substance combines with the ruthenium red.

Examination of the film at this stage under dark-ground illumination confirms this view. Thus, the iodophil globules can be seen exuding from, or in some cases distending, the cell. The nuclear lobes in these liquefying cells often appear more translucent, as though more liquid than in cells in which these droplets are absent. The nuclear material can often be seen streaming along one or more of the pseudopodial processes. If a second dose of a stronger solution of iodine (1 per cent.) be floated under the covered glass, the droplets take on the mauve colour, and when the excess of iodine is washed away and the ruthenium red again added all the cell nuclei show the pink stain. What is the significance of this fact—that the cell nuclei do not stain until they have been acted on by the second dose of iodine? We know that the semi-permeable membrane, or the perinuclear meshwork which normally surrounds the nucleus, is composed of a lipoid material (chiefly lecithin) in combination with magnesium or calcium, the lecithin component being in a comparatively insoluble form. The first effect of the oxidizing agent, the iodine, is to bring about a change in this lecithin coat. The membrane becomes more soluble and is partly removed, and the nuclear substance is thus exposed to influences which reach the cell from outside. The cell now begins to form iodophil substances in the form of droplets. These droplets consist partly of lecithin in the water-soluble form with traces of cholin split off from the oxidized lecithin, and it is probably this cholin component (and not glycogen as was previously thought) which gives the droplet its capacity to stain mauve with iodine.

This exudation of substances from the cell which have the capacity of lowering the surface tension at the contact face between the cell and the medium brings about the protrusion of dendritic and pseudopodial processes, and eventually results in the cell movements. It also contributes to the surrounding and engulfing of red cells, micro-organisms, and other foreign bodies by the leucocytes. It constitutes, in fact, an essential factor in phagocytosis.

Experimental Evidence.

I must now give some experimental proof that this view of what happens in the cell when activity commences is founded on sound evidence. It is first necessary to establish the fact that the capacity of the nucleus to stain with ruthenium red depends on a denudation of its lecithin coat and consequent exposure of the nuclear material to a water-soluble substance like ruthenium red. The following observations bear on this point.

A leucocyte film, obtained by incubating normal blood in a closed cell, is treated with a faintly acid 1/2 per cent. solution in normal saline of potassium chloro-platinate for one hour. The excess of the platinum salt is then washed away in normal saline and a 0.05 per cent. solution of benzidine base in distilled water is added to the film. A blue-coloured deposit is formed, which reveals the situations in the cell where the platinum salt has combined with the lecithin compound to form a precipitate.

Two points, however, at once arise. First, how do we know that the blue deposit seen in the cell is really a lecithin-platinum precipitate coloured blue by the benzidine, and not some protein or other constituent of the cell? In the first place, the potassium chloro-platinate in neutral solution does not give a precipitate with the globulins or plasma proteins, while it does combine with water-soluble lecithin to produce an insoluble lecithin chloro-platinate in the presence of weak acids. Also reagents like mercury perchloride and iodine, which precipitate serum albumin, do not precipitate lecithin. As long as the lecithin is present in the cell in the form of the magnesium or calcium compound it does not react with the neutral platinum salt. This can be demonstrated in the test tube by taking some lecithin magnesium sediment, suspended in water, and adding the neutral platinum salt in solution to it. No reaction occurs, and no blue deposit when benzidine is added after washing the precipitate. If, however, the lecithin magnesium compound be first converted into the water-soluble lecithin by treatment with sodium chloride, then the soap-like solution so formed precipitates with the chloro-platinate, and, after removing the excess of the platinum salt, this precipitate is coloured blue on the addition of benzidine. The demonstration of the arrangement and location of the lecithin substance in the cell by means of precipitation as a chloro-platinate is of considerable physiological interest, because it serves as an indicator of successive stages of cellular activity.

In the inactive phase, as in the white blood cells circulating in the blood, little or no blue deposit is seen after treating the washed leucocytes by the chloro-platinate-benzidine method, although a few blue granules may appear on the surface of the cells. In the slightly stimulated condition, as in cells which have emigrated from the clot when blood is incubated, the lecithin material becomes water-soluble through partial oxidation. Under these conditions a blue deposit is seen as a granular membrane covering the nuclear lobes when the film is treated with platinum and benzidine.

In cells which have undergone further stimulation and have reached a further stage of activity (as by a wash of weak iodine, or by incubation in a medium, which stimulates dendritic formation and iodophil droplets) the blue material is scattered through the cytoplasm as blue grains or masses, and it may collect as a blue ring at the *margin* of the cell. Further, since the water-soluble lecithin tends to flow out of the cell in the form of iodophil droplets, it is possible to prevent this material from dissolving in the surrounding medium by treatment with a weak solution of mercury perchloride. In such cases, after treatment with platinum and benzidine, the blue deposit often forms a film over the surface of the exuded droplets.

Treatment of the leucocyte film with a 1 per cent. solution in normal saline of phospho-tungstic acid produces some change or precipitation in the substance forming the iodophil droplets, whereby the droplet stains with basic dyes such as Nile blue after the phospho-tungstic acid has been previously removed by washing.

Experiments have been carried out with other substances which exert a solvent action on the lecithin nuclear membrane without unduly damaging the cell. Thus, cyclohexanol dissolves the insoluble magnesium lecithin compound in a test tube.

If a leucocyte film be washed with a 3/4 per cent. solution of cyclo-hexanol (hexhydrophenol) in normal saline, the nuclei in the great majority of the cells at once stain pink with ruthenium red. This reagent, by removing the lecithin coat, exposes the nucleus to the ruthenium salt. A saturated solution of ethyl ether in normal saline, on the other hand, while it dissolves the water-soluble sodium lecithin compound, leaves the insoluble magnesium form untouched; ether also brings about a curious fusiform swelling of the protruded dendrites in the incubated leucocyte film which may be due to surface tension changes which follow the solution of the lecithin, and thus to the retraction of these processes.

Pus Cells.

Pus cells can be used instead of incubated white blood corpuscles. If the liquor puris be removed from healthy pus by washing and centrifuging in saline, the cells so treated can be divided into two groups by the addition of ruthenium red: (*a*) living cells, which remain unstained; and (*b*) devitalized or exhausted cells, in which the nuclei take on a pink colour.

On warming the slide the unstained cells commence to throw out dendrites and pseudopods, and eventually form iodophil droplets, while the cells with the stained nuclei retain the spheroidal form of the inactive or the dead cell. Further, if a drop of such living pus in normal saline be incubated for a short time, and then treated by the chloro-platinate-benzidine method, an association can be traced between the distribution of the lecithin compound and the vitality and activity of the cell. The blue deposit appears as a ring surrounding the nuclear lobes in the less active, and as blue masses scattered through the cytoplasm in the more active cells, while in the dead cells, in which the nuclei stain deeply with ruthenium red, the lecithin material is absent, having been washed out of the cell, and no blue deposit is obtained. In the inactive, resting white blood cell, on the other hand, the lecithin substance, although present, is in the insoluble form, hence it fails to react with the neutral chloro-platinate, and consequently no blue deposit is formed with benzidine. The same result has been obtained in the cellular sediment from the cerebro-spinal fluid from a case of pneumococcal meningitis. About one-third of the leucocytes stained pink with ruthenium red, the rest remained unstained. Another portion of the same deposit was treated by the chloro-platinate and benzidine method. The cells showed very little blue deposit. When the same sedimented fluid was incubated, however, an entirely different picture was obtained.

Three portions of the sediment were taken and incubated in closed cells for a quarter of an hour, for half an hour, and for three-quarters of an hour respectively. Each film of emigrated cells, after washing in saline, was treated by the chloro-platinate and benzidine method. The first film showed a fair emigration carpet of active cells, with some blue material, mostly in the neighbourhood of the nucleus. The second film showed more blue deposit, scattered through the cell. The third film presented the same picture in a more advanced form, and, in addition, blue material was seen in the surrounding medium, starting from points which were probably particles of the lecithin compound which had exuded into the medium.

Just as the capacity to stain with ruthenium red depends on exposure of the nucleus, so the capacity of the lecithin membrane to react with the chloro-platinate can be shown to depend on the water-solubility of the lecithin compound. Thus by testing the capacity of the nuclear substance to stain with ruthenium red, and by testing the distribution of the lecithin compound in the cell by the chloro-platinate benzidine method, some idea can be formed of the stage of activity of the cell.

The rapidity and the completeness with which the nucleus stains with ruthenium red provides a means by which the proportion of living to dead cells can be quickly ascertained in any given sample of pus, and affords a useful criterion of the healthiness of a wound apart from any examination of the number of organisms present, provided the cell has not been exposed to oxidizing reagents which would tend to denude the nucleus.

Oxidation and Contact with Foreign Substances as Factors in Cell Activity.

Before leaving the subject of oxidation some reference must be made to previous observations on this point. Metchnikoff, in his classical researches, dealt with the role played by oxidation in stimulating leucocytic activity. More recently Sir A. Wright[5] has recorded observations on the bactericidal property of blood obtained under anaerobic conditions. I have recently reinvestigated this question from the point of view of leucocytic activity. If a little saucer-like shelf be made by coating a circle of wire with hard paraffin, melting above 37° C., this little shelf can be let down into a beaker of liquid paraffin, and a drop of blood drawn from the paraffin-coated finger can be placed on the shelf without coming in contact with the air or any foreign substance other than the liquid paraffin. The drop of blood remains for a considerable time as a sphere, standing upon and only touching the paraffin shelf at one point of its convex surface. The beaker is then placed in the incubator. Coagulation is much delayed, though it occurs eventually, as the drop settles down on the shelf, and a droplet of serum exudes from and adheres to the coagulated sphere.

During incubation, and before coagulation takes place, or at any later period if defibrinated blood be used, the still liquid blood can be drawn up in a very fine pipette, and blown out and examined on a slide. The leucocytes, although they have been incubated for a considerable time, will appear as spherical, inactive cells, resembling white blood corpuscles, floating freely among the red cells.

If, before submergence in the liquid paraffin, the drop of blood be received through the air into a drop of normal saline containing a little dissolved glutathione* or other substance which acts as an oxygen carrier, and then placed on the paraffin shelf and incubated as before, the leucocytes on examination will have lost the perfectly regular outline, and will be roughened by projections from the surface resembling immature dendrites. If treated with iodine some of the cells appear of a port-wine colour. Chemical changes have commenced in the cell which, if carried further, would lead to the production of iodophil droplets and dendrites.

*I am much indebted to Professor Sir Gowland Hopkins for the glutathione. This substance, when added to the blood plasma, greatly stimulates leucocytic activity and pseudopodial movement in the incubated blood.

The reason why these do not form, although the cells have access to oxygen, is, I think, owing to the absence of contact with foreign surfaces. No localized reduction of surface tension is produced at any one portion of the surface of the cell. Hence the cells preserve roughly the circular outline. They show, however, a slight tendency to stick together, and to form agglutinated groups of white cells, although they do not adhere to the red cells. These and other observations enable us to say that in the entire absence of oxygen leucocytic activity is delayed, even at a temperature of 37° C.

But although oxidation may set going the chemical changes in the cell which lead to the formation of iodophil droplets and other effects, contact with foreign substances is necessary to bring about those localized surface tension changes on which dendrite formation and pseudopodial movement depend. These and other observations point to the fact that, when incubated under conditions which prevent contact with foreign substances, certain chemical changes are initiated, but that *contact* is necessary to bring about phagocytosis in the full sense of that word.

This is shown in another way. If a slip of glass, previously heated in a flame to drive off the air, be inserted into the blood drop in which the leucocytes are undergoing incubation under the liquid paraffin, the leucocytes at once attach themselves to the glass surface and throw out dendrites and pseudopods.

The Reversible Process in Leucocytic Activity: Cell Recovery.

Although it has not been possible with our present crude methods to demonstrate fully the recurrence of anabolism following katabolism in a very delicate cell like the leucocyte, after cellular activity has reached the stage at which the nuclear membrane undergoes solution, and the nuclear substance stains deeply with ruthenium red, and iodophil substances have been elaborated and dendrite formation has occurred, yet it can be shown that recovery does follow on a less advanced phase of activity.

For instance, living pus cells (which are simply leucocytes which have emigrated from the blood vessels) must at an earlier stage have been sufficiently active and sufficiently mobile, both as regards their nuclear and cytoplasmic substances, to enable them to pass between the endothelial cells lining the capillary wall. When we recover these pus cells, however, from a well drained pleural effusion, or from the surface of a healthy would, they have returned to the spheroidal shape and inactive condition, although they are by no means dead cells. When washed in normal saline and incubated they rapidly resume activity; they throw out dendrites and pseudopods, and they elaborate iodophil material, and, if activity proceeds further the lecithin membrane may undergo solution, and the nucleus become exposed, and it can then be stained with ruthenium red.

I have already said that in a film of emigrated leucocytes from normal blood a few odd cells will stain with ruthenium red. Are these cells which stain at once dead cells? Are they cells which have wandered on to the surface of mucous membranes, or into the tissue spaces, and have returned by way of the blood stream or the lymph stream to the general circulation by a process of what I have termed "return immigration"? If so they should be found in large numbers in the blood of persons in whom inflammatory foci, or wounds, or catarrhal conditions of the mucous membranes are present.

On the other hand, they may be cells which have become injured in the process of drawing the blood. There are some suggestive facts which bear on this point. In the incubated blood from a patient recovering from pneumonia with a normal temperature, but with some unresolved consolidation at the base of one lung, the leucocyte film of emigrated cells so obtained showed but few cells giving the pink colour. The clot was then detached from the slide, washed, and reincubated on a fresh slide. In this second crop a large number of cells showed pink-coloured nuclei when treated with the same reagent. The second crop of cells from the washed and reincubated clot from the blood of a healthy person remained unstained when treated in the same way. This suggests that the leucocytes in a patient recovering from pneumonia, even after a week of normal temperature, are in a more unstable condition or are less rich in lecithin than in health—that is to say, their lecithin nuclear membrane is more permeable.

The following observations also throw some light on "cell recovery." A cell containing normal blood was incubated for half an hour, and then allowed to stand at room temperature for twenty-four hours. The emigrated cells, which, if examined immediately after incubation, would have been very active and adherent to the slide by dendritic processes, have now, after twenty-four hours, returned to the spheroidal shape. Some of them have become detached from the slide by the retraction or the rupture of their dendrites, and float freely in the serum as circular cells. The cells still adherent to the glass are nearly all more or less circular in outline; in some of the cells the nuclei stain with ruthenium red, while in others they remain unstained.

If such a film of "recovered" circular cells be washed in normal saline and again reincubated for a quarter of an hour in a mixture of native blood plasma and normal saline, or preferably Marshall's solution, these spheroidal inactive cells quickly resume activity. They throw out dendrites, they adhere to the slide, and they elaborate iodophil material. Moreover, they can again revert to the circular form and again be induced to resume activity a second time by repeated incubation. This observation shows that cells in this inactive phase are not necessarily dead cells. If, as I think, they are cells which, after passing through a katabolic or active phase, have reverted to the resting condition, an important fact will have been established in the life-history of the leucocyte and probably also in that of other cells.

In this matter of the development of acidity by cells when in the active phase it is of interest to note that Rous,[6] in 1913, showed that fragments of embryonic tissue explanted into plasma coloured blue with litmus turned pink (that is, developed acidity) as growth proceeded, but remained blue if growth was arrested. Peyton Rous has also recently shown[7] that acid substances are formed within leucocytes and other phagocytic cells under certain conditions during cell activity.

Levaditi and Gabrek[8] also showed that pieces of tissue stained with neutral red and explanted in plasma become colourless as growth proceeds, while sterile portions turn yellow—that is, remain alkaline.

I have previously shown[9] that the property of elaborating iodophil substances is not confined to leucocytes. It is present in certain epithelial cells, both in the skin and in mucous membranes, especially those lining the orifices of the mucous canals, also in some marrow cells, in the giant myeloid cells in sarcomata of bony tissues, and in some cancer cells of epithelial origin.

In the light of the observations now recorded it seems probable that this iodophil substance is not glycogen, as was originally thought, but (as shown by the reactions given with platinum salts) that it consists partly at least of lecithin in the water-soluble form, together with cholin split off from the lecithin. Further, it seems probable that the lecithin component is derived from the partial solution of the perinuclear lipoid membrane during cell activity, and that cell recovery depends on the lecithin content of the cell, and may be associated with the restitution of this perinuclear lecithin membrane.

If these observations are confirmed, then I think a further step will become possible in the elucidation of the difficult problem of the chemical changes associated with katabolic processes in the life of the leucocyte, and probably also in many other cells.*

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* Since this address was given Professor J. B. Leathes, F.R.S., has published his most important Croonian Lectures on "The Role of Fats in Vital Phenomena," in which he describes the essential part played by lecithin in cell metabolism.

ESTIMATION OF THE CARDIAC OUTPUT AS A MEASURE OF ITS EFFICIENCY.

BY

T. STACEY WILSON, M.D.EDIN., F.R.C.P.,
CONSULTING PHYSICIAN, BIRMINGHAM GENERAL HOSPITAL.

THE clinical estimation of the cardiac output depends mainly upon the fact that we are able to observe the extent to which the heart is able to distend the two largest elastic viscera of the body—namely, the lungs and the liver; for a variation in their degree of distension must, owing to their elasticity, result in a variation in their size and in the tenseness of their tissues. Owing to a difference in the density and in the anatomical relationships of these two organs, there is a difference in the clinical method whereby the degree of their distension with blood can be estimated.

The Size of the Lungs as a Measure of Cardiac Output.

The great elasticity of the lungs ensures that a considerable variation in their size must accompany any serious variation in the volume of blood in their blood vessels. A lessened cardiac output due to cardiac inefficiency is followed by a recognizable diminution in their size, and, vice versa, an increased distension with blood (as in chronic venous congestion) is followed by a recognizable increase in their size. The accessibility of the lungs to physical examination renders it easy to note these changes, and in the absence of variations in circulation due to vasomotor control makes the information gained reliable as an indication of the cardiac output.

Owing to the relative rigidity of the thoracic walls any variation in the size of the lungs must result in an alteration in the average level of the diaphragm, and in the degree of hollowing of the suprascapular fossae. These variations in the level of the diaphragm are easily detected, when a patient is recumbent, by percussing out the upper border of the liver dullness on the right side and of the gastric resonance on the left side, for there is almost always enough air in the stomach to admit of the lower level of the cardiac dullness being defined by percussion when the patient is in this attitude. Clinical cases, with diagrams illustrating variations in the level of the diaphragm, are given in my book *The Early Diagnosis of Heart Failure* (pp. 168-178, also 182-183 and 195-199).

Degree of Distension of the Liver as a Measure of Cardiac Output.

In the case of the liver the relative density of its tissue does not favour much variation in its size with variations in its distension with blood; but the configuration of its lower portions, together with their anatomical relationships with the subjacent air-containing viscera, do constitute a very delicate clinical guide to the degree of distension of the liver tissues.

To make this point clear it is necessary to remember the principles which underlie the practice of percussion of a solid body which overlies a resonant, air-containing viscus. If the solid body be elastic and distensible (such as the liver) percussion over it will elicit the resonant note of the subjacent viscus if its tissue be either tensely distended or if it be relaxed, for in either case it will transmit the vibrations of the percussion stroke just as any other hard solid or soft solid body would. When, however, it is sufficiently distended to possess a certain amount of definite elasticity it will be capable of absorbing the vibrations due to the percussion stroke, and thus preventing them from eliciting the resonance of the subjacent cavity; and therefore percussion over such an elastic solid will then give a dull note, if its thickness is sufficiently great in proportion to the force of the percussion stroke.

Now it is a fortunate fact clinically that the liver tissue, when normally distended with blood, does possess to its maximal extent that degree of elasticity which is necessary for the absorption of percussion vibrations, for, as we know well, in the case of a gentle percussion stroke liver tissue half an inch or less in thickness is capable of giving a dull note on percussion when overlying resonant viscera. A very slight lessening of its distension, however, such as characterizes a slight degree of cardiac inefficiency, is sufficient to lessen this power and prevent the thinner portions of the liver from giving a dull note when overlying the stomach or intestines. This statement can easily be put to clinical proof. If a series of patients be examined who are suffering from the slighter degrees of cardiac inefficiency which cause the lassitude so commonly observed after influenza and similar infective conditions, it will be found that in the majority there is distinct curtailment of the area over which an absolutely dull liver note would be obtainable in a similar series of healthy persons.

In cases of really severe myocardial weakness the absolute liver dullness often does not reach the middle line of the costal arch, and in very severe cases may be unobtainable internal to the right of the nipple line.

As further proof of the accuracy of this method of gauging the cardiac output it will be found, on carefully mapping out the area of absolute liver dullness in such cases, that as soon as improvement sets in the area of absolute liver dullness enlarges day by day until it once more returns to the normal size.[1]

Diminution of the Cardiac Dullness an Evidence of Lessened Cardiac Output.

Although the amount of recognizable cardiac dullness varies much in patients whose circulation appears to be normal, and although in emphysema it may be absent although the heart be actually enlarged, yet nevertheless a lessening of the cardiac dullness is a valuable sign of lessened cardiac output. This diminution in the area of cardiac dullness may be in part due to the diminution in the size of the heart which accompanies lessened output. Other factors may contribute to this diminution in the cardiac dullness—such as a badly filled aorta or pulmonary artery allowing the heart to fall away somewhat from the anterior chest wall.

A careful study of many cases showing loss of cardiac dullness, however, suggests the probability that the amount of cardiac dullness depends primarily upon the tenseness of the heart and its contained blood, just as is the case with the liver. This may seem theoretically to be altogether improbable, but the clinical evidence in favour of it is very strong. There are certainly clinical grounds for the assertion that valuable information as to the cardiac output can be obtained by observation of the area of the cardiac dullness, and from carefully noting the variations in its size from day to day.

Estimation of the Patient's Vigour as an Indication of the Vigour of the Circulation.

The general practitioner who knows his patient well is able to form a very sound estimate of the cardiac output (when other causes of want of vigour can be excluded) by taking the common-sense view that the vigour of an individual must be proportioned to the effectiveness of the circulation. The same principle of judging the amount of blood the heart is able to circulate without embarrassment finds expression in the exercise tests now so generally adopted for ascertaining the efficiency of the heart. Both these tests, though valuable and reliable up to a certain point, are by their nature only applicable to the less severe degrees of cardiac inefficiency. They give us, moreover, no detailed information regarding the circulation.

Estimation of the Cardiac Output by the Study of the Pulse.

Little information as to the cardiac output can be obtained from the radial pulse (except in the severe degrees of cardiac inefficiency) unless the normal pulse for the individual be well known to the observer. When, however, the normal pulse is well known the radial pulse can give useful information as to the falling output due to cardiac inefficiency.

There are, however, many fallacies which must be guarded against owing to the effect of vasomotor changes upon the peripheral circulation. For instance, in a patient with normally somewhat high blood pressure lessening in the fullness and force of the pulse may only mean that there had been successful elimination of the toxic materials

which were the cause of the high blood pressure; the feebler and more empty radial artery, instead of meaning lessened output, may be accompanied by greater efficiency of the circulation and an increase in the cardiac output.

In the brachial artery, when a sphygmomanometer is used really valuable information as to the cardiac output is obtainable if the range of oscillation of the needle of the aneroid be studied as well as the systolic and diastolic pressures. An abnormally small range of oscillation naturally implies a deficient distension of the arm with blood at each beat of the heart, and therefore presumably a lessened output. It is often possible by the use of the sphygmomanometer alone to diagnose cardiac inefficiency such as that which follows influenza, and to forecast with fair accuracy what other signs of deficient output will be observable in the patient. It must, however, be remembered that in certain conditions small oscillation of the pulse does not imply diminished cardiac output, but only an abnormal state of the peripheral circulation. For instance, a small range of oscillation usually characterizes Graves's disease, Ménière's vertigo, and allied conditions. Information as to the cardiac output can also be gained by noting the nature of the sound heard at the bend of the elbow when using the auscultatory method of reading the blood pressure. A distinctly slapping sound is suggestive of badly filled arteries, due either to failure in cardiac output or to undue relaxation of the arterial system.

When knowledge of the sphygmomanometer has been further increased it is possible that valuable information as to the cardiac output may be given by the relation of the systolic pressure estimated by the finger to that estimated by auscultation, taken in conjunction with the information given by the range of oscillation of the needle of the aneroid.

On comparing the information gained by observation of the size of the lungs, of the physical condition of the liver as judged by percussion, together with the size of the area of cardiac dullness and the results given by the sphygmomanometer, a very trustworthy and exact estimate can be formed as to cardiac output, and the recognition of myocardial weakness will be made more easy, whether toxic in nature or due to atheroma of the coronary arteries. It must, however, be borne in mind that the cardiac output may be lessened by the compensatory diminution in the total volume of blood in circulation which occurs (apart from cardiac weakness) in starvation and certain other pathological conditions.

REFERENCE.

[1] See *The Early Diagnosis of Heart Failure*, Figs. 42 to 45 (pp. 196-199).

URINARY INFECTIONS WITH B. COLI AND THE PYOGENIC COCCI:

THEIR PATHOLOGY AND THEIR TREATMENT WITH COLLARGOL.

BY

HAROLD H. SANGUINETTI, M.D., B.Ch.,

PATHOLOGIST, LONDON TEMPERANCE HOSPITAL.

A THOUSAND years ago Rhazes[1] described a case of urinary infection in a young man, but it was not until, at the fifteenth French Congress of Surgeons in 1892, Guyon and Reblaub[2] called attention to the frequent occurrence of spontaneous urinary infections—that is, infections not resulting from trauma or consequent on obstruction—that medical men became alive to their existence. Guyon then expressed the view that the infection was an ascending one from the bladder to the kidney, but ever since there has been a controversy about this question, concerning which there are now two main views.

The first view, the one enunciated by Guyon and vigorously supported by C. R. Box[3] among others in this country, maintains that the infection passes from the external surface of the urinary organs along the urethra to the bladder and thence upwards to the kidneys; while according to the second view the infection is haematogenous, and first affects the kidney and its pelvis, whence it passes down into the bladder. Frank Kidd is a firm upholder of this view, which is accepted by Sir William Hale-White[4] and probably by the majority of physicians and surgeons. Of course, the fact of the infection being haematogenous would not preclude primary infection of the bladder with ascent to the kidney. The upholders of the ascending view lay stress on the far greater frequency of the complaint in females than in males, while their opponents point out that, although less frequent than in females, cases of urinary infection are quite common in males, in whom the length of the urethra renders the probability slight of an infection spreading from the meatus to the bladder, even if contamination with the most common infecting organism, the *B. coli*, were more frequent than it probably is. Experimental evidence of the effects of the presence or absence of obstruction is adduced in favour of their argument by both sides. Frank Kidd[5] maintains that "Pure cystitis seldom occurs, but when it does it is never associated with fever. This is because the bladder is designed as a reservoir, is poorly supplied with lymphatics that it shall not absorb water, and therefore equally not poisons."

Now the line of treatment adopted must depend on which of these views is correct. In the end we shall probably find that both views are correct—that is, that in some cases the infection starts in the bladder, in others in the kidney, and that naturally a different line of treatment will be needed for each class of infection. L. S. Dudgeon[6] and his co-workers showed that in 74 per cent. of *B. coli* infections in females a non-haemolytic bacillus was present, a haemolytic type in 26 per cent., while in males this order of frequency was reversed. This lends some support to the view that the usual progress of the infection differs materially in the two sexes.

The protagonists of both views regard the symptoms of fever, general malaise, and tenderness over one kidney as always evidence of the existence of pyelitis, but I question whether this view is based on indubitable evidence. Cystoscopy combined with ureteral catheterization might give the evidence desired, but in the early stages such examinations are considered inadvisable. However, Frank Kidd has made two or three cystoscopic examinations in the earliest stages, and thus describes what he saw:

> "The whole bladder wall was intensely engorged and inflamed and covered with portions of purulent membrane or fibrinous deposits and the mouths of the ureters buried in the general oedema of the mucous membrane."

I suggest that such oedema produces partial obstruction of the ureteric orifices with consequent distension of the ureter and renal pelvis, accompanied by congestion and tenderness of the kidney. I do not maintain that the pelvis of the kidney is never involved in these cases of urinary infection, but question whether the involvement is as frequent as is usually maintained.

From the successful effects of renal lavage, in which 4 c.cm. of 5 per cent. collargol are injected through a ureteric catheter into the renal pelvis, compared with the unsatisfactory results of ordinary vesical lavage, Frank Kidd considers he has clinched the argument in favour of primary and persistent infection of the kidney, into which he has found the collargol penetrates. In view of the results I have obtained by injecting 0.5 to 2 per cent. collargol into the bladder, I am led to doubt whether his conclusions are justified. It must be borne in mind that 4 c.cm. of 5 per cent. collargol would make 40 c.cm. or about 1⅓ oz. of 0.5 per cent., and that the results attributed to renal lavage may possibly be due to the effect of the collargol on the bladder. I must, however, admit that I have obtained no such striking successes as cure after two or three injections. However, in Case 1 of my series the patient, who, previous to receiving the treatment I will describe, suffered from recurring attacks of fever, after treatment had no more of such attacks and has remained cured for over four years. It seems reasonable to conclude either that cystitis alone may produce all the symptoms usually attributed to the presence of pyelitis, or that pyelitis in this case was the result of an ascending infection. The other successful cases of this form of treatment justify the conclusion that, whether the infection ascends or descends, infection of the bladder alone is a very frequent condition in chronic cases, and that, even if the acute cases start in the renal pelvis, the infection there soon disappears, while that in the bladder

persists. Even cases of bacilluria have been cured by intravesical treatment.

In treating these infections a drug must be chosen which, while it may have a direct bactericidal effect *in vitro*, must not impede, and, if possible, should stimulate the natural methods of the tissues in overcoming infection. Collargol appears to possess these qualities.

Collargol, first used in the treatment of cystitis by Voelker and Lichtenberg[7] in 1905, was recommended to me for the treatment of a *B. coli* urinary infection by Mr. Percy Sargent in 1912. But although its beneficial action was reported so long ago, and although Frank Kidd speaks highly of its use in renal lavage, little use seems to have been made of it in recent years, partly, no doubt, owing to the unfavourable report on its bactericidal action by Marshall and Neave[8] in 1906, but mainly owing to the prevailing view that the primary and persistent seat of the infection was the kidney and renal pelvis. I have, however, myself investigated the bactericidal action of collargol *in vitro*, and found that in a dilution of 0.25 per cent. it will destroy *B. coli* in half an hour (a very conservative estimate of its potency), and that it is equally efficacious against streptococci. But its action in these infections is due not only to its bactericidal action, otherwise a 4 per cent. solution, which is quite well borne by the bladder—that is, can be retained without discomfort—would produce the best effects, whereas it will be found that 0.5 to 1 per cent. will usually prove more efficacious. The strength must be controlled by microscopical examination, and in the early stages pus must be regarded as beneficial and not the reverse. Indeed, in a case of bacilluria no progress can be looked for until pus cells begin to appear in the urine. When a case, after progressing favourably, tends to relapse, then usually it will be found advisable to reduce the strength of the collargol solution injected.

The technique of the treatment is simple, and in females can be carried out by a well trained surgical nurse, but unless sure of the nurse's skill the medical attendant should carry out the treatment himself. One of the two men in my series of cases carried out the later part of his treatment himself. A syringe, such as the ordinary large metal ear-syringe with a conical nozzle, capable of holding 2 to 3 ounces, is filled with the collargol of the desired strength (0.5 per cent. is a good strength to begin with, sterile water being used as a diluent); see that the syringe does not leak at the junction of nozzle and barrel. A soft rubber or gum-elastic No. 8 catheter with a conical proximal end, into which can be inserted the nozzle of the syringe, is passed into the bladder with aseptic precautions. Any urine in the bladder is drawn off and a sample kept for microscopical examination. The nozzle of the syringe is now inserted into the catheter and the collargol injected, after which the catheter, still attached to the syringe, is withdrawn, the collargol being allowed to remain in the bladder until the patient feels a desire to void it—that is, from twenty to sixty minutes. A small glass funnel, into which the collargol can be poured, may be substituted for the syringe. As the collargol solution is brownish-black and cannot be easily removed from any fabric on which it drops, care must be taken suitably to protect the bedclothes, etc.

It is not necessary for the patient to remain lying down after the injection, nor to remain in bed during the course of treatment, but confinement to bed will probably hasten cure, and in resistant cases should be insisted on. Injections are made daily until the urine, as shown by microscopical and cultural examination, has become sterile, or until success by this line of treatment seems improbable.

The number of cases—namely, 17—treated by me is possibly too small to base an optimistic estimate of the results obtainable if the treatment were more widely used, but it has enabled me to follow the urinary changes with the microscope, in many cases by daily examinations.

The 17 cases treated by me since 1921 were infected at the outset with the following varieties of bacteria: 2 cases with staphylococci only; 2 cases with *B. coli* and streptococci; 2 cases with *B. coli* and staphylococci; 11 cases with *B. coli* only. Eleven cases have been cured, in the sense that at the end of treatment neither pus nor bacteria were present in the urine, as proved by microscopical and cultural tests. In 7 of these the urine was known to have remained sterile for at least a month. It was not possible to keep the remaining 4 patients under observation so long. Case 4 in the series has had three attacks, each of which has been successfully dealt with, the urine having been rendered sterile on each occasion for lengthy periods. There has, then, been a successful result in 64.7 per cent. of the cases, or, if Case 4 be counted as three cases, in 68.4 per cent.

Case No.	Sex and Age.	Private or Hospital	Duration of Infection Prior to Collargol Treatment.	Organisms Present.	Length of Collargol Treatment.	Result.
*1	M.50	Private	6-7 years	B. coli	Not known	Cured.
*2	F. 40	Private	Few days	B. coli	14 days	Cured.
3	F. 48	Private	2 months	B. coli	2 periods of 3 weeks	Not cured.
*4	F. 47	Private	6 or more years	B. coli	1st attack 14 days;	Cured.
					2nd attack 19 days;	Cured.
					3rd attack many weeks	Cured.
5	F. 40	Private	5-6 days	B. coli	9 days	Cured.
*6	F. 83	Private	1 month	B. coli and staphylococci	56 days	Cured.
7	F. 18	Hospital	4-5 weeks	Staphylococci	10-14 days	Cured.
*8	F. 35	Private	5½ years	Streptococci and B. coli	16 days	Cured.
*9	F. 65	Private	3 years	B. coli	12 days	Cured.
10	F. 65	Hospital	? 5 years	B. coli	15 days	Not cured.
11	F. 43	Hospital	1 month	B. coli	3-4 weeks	Not cured.
12	F. 41	Hospital	?	B. coli	14 days	Cured.
13	F. 33	Hospital	1 week	B. coli and staphylococci	1 month	Not cured.
14	F. 47	Hospital	13 months	B. coli and streptococci	10 weeks	Not cured.
*15	F. 49	Hospital	? 3 years	B. coli	1 month	Cured.
16	F. 66	Private	? years	B. coli	16 days	Cured.
17	M.53	Private	? years	Staphylococci	14 days	Not cured.

* In these cases freedom from infection was known to have lasted at least a month. Case 10 had a relapse three weeks after leaving hospital, where too late she was found before her discharge still to have slight urinary infection. Case 13 was practically free from infection on discharge from hospital. The hospital cases, owing to operations and other causes, were usually not in as good general health as the private cases.

Unless treatment is continued until the urine is free from pus and sterile relapses are liable to occur. Macroscopic examination is certainly not sufficient, nor do I think we may be content with microscopical examination. Cultural tests are almost essential, although, in the case of a *B. coli* or streptococcal infection, the development of three or four colonies of *Staphylococcus albus* on the culture medium may indicate no more than infection from external parts during the passage of the catheter.

The following is a list of the cases with a very brief summary of the course of treatment.

Case 1.—F. A. N., male, aged 50. *B. coli* infection followed two months after operation by Sir John Thomson-Walker for removal of calculus from left ureteric orifice. Treated by various means, including vaccines and lavage, until 1921. Had several attacks of fever. Early in 1921 began treatment with 2 per cent. collargol. Improvement rapid, but exact time required to render urine sterile not known, as after the first few injections the patient administered the remaining injections himself. Has remained cured four years.

Case 2.—Mrs. G. *B. coli* infection with fever during convalescence from hysterectomy. Collargol 2 per cent. injections cured the condition in about fourteen days. Urine sterile three to four weeks later.

Case 3.—Miss N. Severe attack of pyelonephritis. Temperature 103° to 104° F. Pus and *B. coli*. Treated with potassium citrate and later with vaccines. Two months after attack collargol 2 per cent. injections begun. Treatment at first greatly improved condition of urine, but success was not maintained and treatment was discontinued. (Better results might have been obtained by reducing the strength of collargol.)

Case 4.—Mrs. N., aged 47, wife of Case 1. Had suffered from *B. coli* infection six years. Had *B. coli* bacilluria when treatment by collargol 2 per cent. was begun. Improvement began when collargol 1 per cent. was substituted. The urine then became sterile in fourteen days. Has subsequently had two reinfections very resistant to treatment, but was ultimately cured.

Case 5.—Miss B., aged 40. *B. coli* infection with frequent painful micturition for five to seven days. Temperature 99.4° F. Collargol 2 per cent. rendered urine free from pus and organisms in nine days.

Case 6.—Mrs. K., aged 83. Attack of fever suggesting influenza or appendicitis. Temperature 101° F. Pus, *B. coli*, and staphylococci in urine. Temperature normal three weeks after beginning of attack. Ten days later collargol injected. Urine not sterile till fifty-sixth day of treatment. Injections almost, but not quite, daily, the strength of collargol varying from 0.5 to 2 per cent. and even 4 per cent., but strong solutions made matters worse. Urine sterile many months after cessation of treatment.

Case 7.—Mrs. M., aged 18. Staphylococcus infection. In-patient in London Temperance Hospital for three weeks. Treated with oral administration of drugs. Collargol injections in out-patient department produced cure in ten to fourteen days.

Case 8.—Miss E., aged 35. Urine infected with streptococci and *B. coli*. Collargol 1 per cent. cured the condition in about a month.

Case 9.—Mrs. T., widow, aged 65. Cystitis since removal of an innocent intravesical growth in Guy's Hospital three years previously. Frequent micturition, pus, and *B. coli*. Collargol 1 per cent. injections. Urine free from pus and sterile after nine days' treatment. Treatment discontinued on the twelfth day; urine still sterile on the seventeenth day, and no return of symptoms up to time of her death from pneumonia six months later.

Case 10.—Woman, aged 65; in-patient in London Temperance Hospital. First had difficulty in micturition in 1918; curetted April 12th, 1923. On April 19th painful micturition, pus, and *B. coli* in urine. From April 30th till May 14th collargol 1 per cent. daily. On June 15th only four colonies of staphylococci on agar inoculated with loopful of deposit. On May 23rd culture revealed a few staphylococci and *B. coli* in urine. She had no further treatment and was discharged. Three weeks later reported by medical attendant to have another attack of "cystitis."

Case 11.—Married woman, aged 43; in-patient in London Temperance Hospital. Hysterectomy, April, 1923. Just prior to operation urine "strong-smelling." On May 1st the urine contained pus and *B. coli*. Collargol 1 per cent. given for three to four weeks without much improvement. (Twelve months later no pus in urine, three or four colonies of *Staphylococcus albus* developed from loopful of deposit.)

Case 12.—Woman, aged 41; in-patient in London Temperance Hospital. Pus and *B. coli* in urine. Collargol 1 per cent. injections rendered urine sterile in approximately fourteen days.

Case 13.—Married woman, aged 33; in-patient in London Temperance Hospital. Febrile attack; pus, *B. coli*, and staphylococci in urine. On the tenth day, when the temperature had fallen to normal, collargol injections begun. Strength varied from 0.5 to 2 per cent. A month's treatment had not rendered the urine quite sterile, nor free from pus cells.

Case 14.—Married woman, aged 47; in-patient in London Temperance Hospital. Frequent painful micturition ten months prior to operation for a large uterine fibroid, which was followed by phlebitis. Urine examined two months after operation contained blood, pus, *B. coli*, staphylococci, and diphtheroid bacilli. Collargol injections persisted in for about ten weeks, with one or two intermissions, resulted in considerable improvement, but not cure.

Case 15.—Married woman, aged 49; in-patient in London Temperance Hospital. Operation March 27th, 1924—amputation of uterine cervix, colporrhaphy and perineorrhaphy. Had had discomfort in bladder for three years. On April 14th much pus and *B. coli* in urine. On April 19th injections of collargol begun and continued till May 12th, when neoprotosil 10 per cent. was substituted for the collargol. Treatment discontinued on May 15th, and patient discharged from hospital on May 22nd, when no *B. coli* were present in the urine.

Case 16.—Mrs. H., widow, aged 66. Had synovitis with effusion in left knee. Urine contained pus and *B. coli* (condition probably of long standing). No urinary symptoms. Collargol 1 per cent. injections rendered urine sterile in seventeen days. Sterile a month later.

Case 17.—M. de L. Long-standing urinary infection. At beginning of treatment blood, pus, and staphylococci present in urine in considerable quantity. Collargol 0.5 per cent. injections rendered urine sterile in twelve days. Bacteria but no pus present one week later.

While very well satisfied with the results I have so far obtained with collargol, and convinced of its efficacy, I do not suggest that equally good results might not be obtained with other remedies unused by me. Certainly the ordinary antiseptics used for lavage have not proved curative. What, however, I desire most to suggest to my medical brethren is, not the efficacy of any particular drug, but the efficacy of treatment of these infections through the bladder.

In conclusion, I desire to express my thanks to my colleagues Mr. James McClure and Mr. R. A. Kerr for permission to treat cases under their care in the London Temperance Hospital, and for their friendly encouragement during the course of the investigations. My thanks are also due to Messrs. John Bell and Croyden, Ltd., for greatly assisting me by obtaining for me a supply of collargol at a cost much below the usual market price.

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A CLINICAL STUDY OF RHEUMATOID ARTHRITIS.*

BY

A. H. DOUTHWAITE, M.D., M.R.C.P.

THE following observations are based on examination of 50 patients suffering from rheumatoid arthritis, 38 of whom were females. Attention has been purposely directed more to the patient's general condition than to the state of the affected joints, which are only too apt, by their prominence, to absorb the interest of the physician to the detriment of the patient. Thus in every case, prior to the onset of joint pain, there had been a period, extending in one case up to two years, during which a gradual deterioration of health was in progress. This showed itself most frequently by loss of energy, both mental and physical, together with constipation, and loss of weight and appetite. In a few cases increasing pigmentation of the skin, so typical of this disease, had actually been observed before any painful symptoms had arisen.

No direct relationship could be traced between general diseases contracted in earlier life and the occurrence of rheumatoid arthritis. In 20 per cent. of cases there had been, however, an illness shortly preceding, and probably precipitating, the onset of the disease—a fact which goes to prove that an attack of rheumatoid arthritis is almost invariably dependent on a previous lowering of the general bodily resistance. Of these, influenza occurred in 8, bronchitis in 1, puerperal haemorrhage in 1.

ONSET OF ARTHRITIS.

It is of great importance to note that in no case was more than one joint involved in the original attack. This was usually the wrist or one of the interphalangeal joints, which, having remained swollen and painful for a few weeks, completely subsided. This was followed, after any period from a few days to several weeks, by extension to other joints.

Particularly noteworthy are those symptoms referable to the involvement of the small joints of the spine and the neighbouring structures. Pain radiating over the occiput may be the very first symptom—in fact, 4 of my cases were originally sent to neurological out-patient departments, 2 diagnosed as neuralgias of obscure origin, and 2 as functional headache. The patients themselves may refer to this pain as headache, but actually it is quite distinctive, being frequently unilateral, intermittent and shooting in character, aggravated by rotation of the head, and following the course of the occipital nerves. When changes occur in the superficial joints, the diagnosis of this pain is clear, but before this it can only be suspected by exclusion, for changes demonstrable by the *x* rays, though usually present in the later stages of the disease, cannot be looked for during the first few months. Girdle pains may be produced in like manner by involvement of the intercostal nerves.

Considerable difference of opinion exists as to the correct explanation of these symptoms. That the pain should be due to any pressure by bony outgrowth is inconceivable, for this does not occur, at any rate for several years. There are, then, two hypotheses left: one is that there is a direct infection of the nerve roots by the same process that gives rise to the arthritis; the other, that the nerve root is compressed by inflammatory swelling of the involved connective tissue in the joint neighbourhood, or that the inflammation extends directly into the nerve roots. Arguing on the analogy of the more superficially placed joints, the latter view is perfectly tenable, for indeed their early deformity is largely due to periarticular swelling. Furthermore, the nerves which are involved are usually those related to a diseased area of the spine—a fact which suggests a localized inflammatory process rather than one attacking them independently via the blood stream.

Skin.—The skin is moist, profuse sweating being present on the legs, feet, and palms of the hands. The discoloration of the skin, so admirably described by Kent

* Thesis approved for the degree of Doctor of Medicine in the University of London (abridged).

Spender,[1] was present in 29 of my cases, of which 26 were females and brunettes. It varied from a generalized brownish colour to a condition of discrete pigmentation, the spots averaging 5 mm. in diameter. Their distribution was very irregular, but chiefly evident on the forehead, abdomen, and extensor surfaces of the forearm. The possible association between such pigmentation and the constantly low blood pressure in these cases is unavoidable. Thus there seems little doubt that both melanin and adrenaline have common precursors which are protein derivatives. Halle has shown that tyrosine could be converted to adrenaline, and concluded that in the event of disease of the suprarenals this substance accumulated in the tissues and was oxidized to melanogen and finally to melanin. In a recent paper Spencer[2] reviews the subject of melanosis and gives a list of the probable chemical precursors of melanin, including tyrosine, a recognized antecedent of adrenaline. Arguing from the analogy of recognized endocrine disorders—for example, exophthalmic goitre and Addison's disease—it seems not unreasonable to assume that the general constitutional disturbance of rheumatoid arthritis may involve the suprarenal bodies, with depression of function and reduction of adrenaline output, with consequent lowering of blood pressure, increased melanin formation, and pigmentation. In 2 cases (males) psoriasis was present. In both exacerbations of arthritis were accompanied by aggravation of the skin disease. Five cases suffered from lupus erythematosus, which had followed the onset of arthritis by periods varying from three weeks to five months. The coexistence of these conditions appears to me, at least in the second case, to rest on more than a coincidence, and it is noteworthy that the trend of modern dermatological thought is to consider both eruptions as skin reactions to toxins arising from foci of chronic sepsis.[3]

Cardio-vascular System.—Rapidity of the pulse rate, a feature which has been stressed by many observers, was far less noticeable in this series than its remarkable daily fluctuations. Thus a pulse varying in daily rate from 65 to 110 was by no means uncommon in patients confined to bed. In no case was disease of the valves present. The blood pressure, however, in every case was found to be low; the following readings were typical of the series:

Age.	Systolic Pressure.	Diastolic Pressure.	Age.	Systolic Pressure.	Diastolic Pressure.
33 ...	100	65	34 ...	105	55
29 ...	120	80	32 ...	119	70
42 ...	114	75	29 ...	118	70

No striking changes in the blood occurred. The lowest erythrocyte count numbered 4,096,000, the highest 5,120,000. In all cases a leucopenia was present. A differential count showed a slight relative increase in lymphocytes.

Nervous System.—Mention has already been made of the pains referable to irritation of the posterior nerve roots. In 3 cases there was definite peripheral neuritis affecting the legs. With these exceptions, the knee-jerk was found to be unusually brisk at the height of the disease, with a gradual return to normal as the disease passed into a less acute stage.

Muscular System.—Muscular weakness and wasting appeared constantly, and usually there seemed to be a close relationship between the degree of inflammation of the joint and the associated muscular atrophy. In an appreciable number of cases, however, a different picture presented itself. An extensive and early muscular wasting had occurred which appeared unaccountable on the grounds of a disuse atrophy. Thus in one case in which the shoulder-joint had been painful for three weeks, but in which no abnormal signs could be detected apart from pain on movement, the deltoid, supraspinatus, biceps, and upper part of the trapezius were greatly reduced in bulk and had lost their usual firm consistency. They were weak in action but not tender to pressure. Such changes have received more attention in France than in this country, and are there regarded as reflex trophic disturbances. Possibly they may be explained as being due to a complete inhibition of those minimal motor impulses which normally produce tone in muscle.

Gastro-intestinal Changes.—The common assertion that achlorhydria or marked hypochlorhydria is an occurrence of extreme frequency in rheumatoid arthritis is totally unsupported by my results. The gastric contents of 30 patients were examined by the fractional test meal. In 27 the total and free acidity were within normal limits; in one case there was hyperchlorhydria, and in 2 cases definite hypochlorhydria. The rate of emptying was often delayed. Other workers on this subject[3] [4] greatly stress the frequency of achlorhydria, and suggest that it plays a part in allowing infective organisms to pass unharmed through the stomach to the intestines, there to elaborate their toxins. This divergence of results can, I think, be explained, in the cases quoted by Coates and Gordon, by the fact that they used the Ewald's test meal, which clearly cannot give a true picture of the various phases through which the gastric contents pass. The total number of cases investigated by Hurst is not mentioned. The only other noteworthy change in relation to the digestive system was the nearly constant gastroptosis and enteroptosis as demonstrated by radiography. In all, except the hyperchlorhydric, the stomach was extremely low in position, atonic, and exhibiting feeble peristalsis. The colon showed scanty segmentation. There was no true intestinal stasis.

Lymphatic Glands.—In 4 cases enlargement of glands associated with the inflamed joints took place.

Examination for Origin of Infection.

Examination was made of: (1) the air sinuses of the skull; (2) the teeth (including *x* rays); (3) the tonsils; (4) the faeces; (5) the anal region for suppurating piles, etc.; (6) the vagina; (7) the prostate and urethra.

Dental and tonsillar infection proved by far the most fruitful sources, *Streptococcus longus* being cultivated in each case.

TREATMENT.

The following procedure was adopted with the six cases who were hospital in-patients: (1) Immobilization of joints in the acute stage, if possible by extension splints. (2) Eradication of septic foci. (3) Immunization by means of an autogenous vaccine. (4) Massage and passive movements. (5) Auto-serotherapy. The first, second, and fourth steps call for no further comment.

Method of Vaccine Administration.—In some patients any attempt to raise the vaccine dosage above a few million results in violent aggravation of the arthritis, probably as the result of sensitization to the foreign protein. In view of this fact the usual method of administration was not adopted, but before each injection of the main dose subcutaneously, a minute quantity (a quarter of a million) was administered intravenously in the hope of desensitizing the patient to the subsequent dose. Highly satisfactory results were obtained by this method, which furthermore allows of a much more rapid increase in dosage than is possible by the subcutaneous administration alone.

The symptoms, though subsiding to a certain point, failed to disappear completely; probably the antibodies were unable to gain access to the oedematous periarticular tissues. On this assumption, the following procedure was adopted. Three days after the final dose of vaccine 20 c.cm. of the patient's blood was withdrawn into a sterile vessel and allowed to stand in an ice-chest. The serum was then separated from the clot. The patient having been anaesthetized, serum was injected through a fine needle so as to infiltrate the swollen tissues right down to the synovial membrane, and finally a small quantity was injected into the joint cavity. On the following day in each case a very striking improvement was observed. The joints could be moved with little or no pain, the swelling had partly subsided, and subjectively the patients experienced enormous benefit.

CASE.

E. R., female, aged 36; admitted February 10th, 1923, with a history of pain starting in the finger-joints fourteen months previously. On admission there was swelling of all the small joints of fingers and hands and of the right tarso-metatarsal joint, together with well marked pigmentation, gastroptosis, and muscular wasting. Blood pressure 105 and 55.

A *Streptococcus longus* vaccine was prepared from the enucleated tonsils and treatment carried out as described. Before the injections of her serum she was unable to knit owing to the painful condition of the fingers. On the day following this treatment she was actively knitting with complete freedom from pain. She was discharged on April 10th free from pain, and six months later she wrote stating that she had had no further trouble and was busy with housework. Similar results were obtained with four other cases.

It is, of course, too early to speak of complete cure, but the results justify their inclusion here.

In this abstract I have necessarily omitted details of the very important general treatment, but would just mention that fresh air and sunlight baths (artificial in this country) often produce the most astounding improvement in refractory cases.

The widespread pessimism in dealing with rheumatoid arthritis is responsible for the existence of so many cripples who have been allowed to drift from bad to worse. If, on the other hand, treatment on the lines indicated is carried out, always bearing in mind that the obtrusive joint pains are but concomitants of a host of pathological changes throughout the body, great hope may be held out that rapid relief and ultimately complete cure will be achieved.

My thanks are due to Drs. Beddard, French, Hunt, Poulton, Mutch, and Symonds, for permission to examine and treat certain of their cases.

REFERENCES.
[1] Kent Spender: *Allbutt's System of Medicine*, vol. 3, 1897. [2] Barber: *Taylor's Practice of Medicine*, 12th edition. [3] Hurst: *Lancet*, 1923, p. 111. [4] Coates and Gordon: BRITISH MEDICAL JOURNAL, September 29th, 1923, p. 562. [5] Spencer: Ibid., November 17th, 1923, p. 907.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE SIGNIFICANCE OF HAEMORRHAGE IN CHRONIC UTERINE SEPSIS.

RECENTLY we have had admitted to the wards a case of unusual interest, illustrating the consequences of not recognizing the earliest sign of subinvolution of the uterus—namely, haemorrhage—and showing the efficacy of appropriate treatment.

The patient, aged 21, was admitted to hospital on April 29th, 1925, with a history that she had been confined nine weeks previously. She was in labour sixty-four hours; delivery was instrumental, and four stitches were inserted in the perineum. She bled for the first five weeks, then stopped for ten days, and had been bleeding ever since. An abscess was opened in the right breast three weeks after confinement.

On admission she was pale and anaemic; the breast was draining freely; the lochia still red. Temperature 103° F., pulse 104. On May 1st an intrauterine injection of pure glycerin was administered. The haemorrhage stopped a few hours after this treatment. On May 4th the intrauterine treatment with pure glycerin was repeated. Blood cultures were normal, but a cervical smear showed streptococci.

By May 6th the patient had been in the hospital seven days, and each evening the temperature had reached between 103° and 104°. It was thereupon decided to give four intrauterine injections of pure glycerin within the next twenty-four hours. We were then rewarded by seeing the temperature fall from 104.6° to normal and not rise again.

Remarks.

The earliest sign of morbidity in this case was obviously the fact that the lochia did not lose their red colour as they ought to do by about the end of the first week. This condition should have been recognized as pathological. In other words, the case should have been treated as one of secondary haemorrhage. It should have received the same care and attention as bleeding from a septic amputation stump or any other septic wound. It has long been my contention that a woman after confinement should not be allowed to trickle for weeks for lack of appropriate treatment. She may receive ergot and douches, or be curetted or swabbed out with strong styptics; but none of these measures are as effective as the intrauterine treatment with glycerin.

I have now had the definite experience extending over many cases that if the lochia are still red by about the seventh to the tenth day this is a sign of secondary haemorrhage from the uterus. I find that glycerin is the best drug in stimulating the uterus to contract, and stops haemorrhage far better than any form of intrauterine manipulation or medication.

In a very large number of cases I have had the satisfaction of seeing patients improve rapidly and their temperatures fall after three or four treatments in the twenty-four hours instead of once daily.

REMINGTON HORBS, M.D.,
Medical Superintendent, St. Mary Abbots Hospital, W.8.

CEREBELLAR ABSCESS.

THE diagnosis and treatment of brain abscesses are sufficiently difficult to make each case interesting.

M. L., aged 20, domestic servant, had a history of chronic left otorrhoea for several years. Five weeks previous to being seen by me she was admitted to a hospital suffering from headache and earache. After two weeks she was removed home by her parents, too ill to walk. She was at home for three weeks, before being sent to the North Lonsdale Hospital.

When seen by me two days before admission she was lying curled up in bed in a dazed condition. She resented examination or questioning, but answered slowly and correctly. Urine was being passed involuntarily. Coarse nystagmus on moving the eyes to the left was present. A provisional diagnosis of cerebellar abscess was made. She was admitted on May 11th, 1922, and the following is an extract from the hospital report:

"She lay curled up in bed on the right side, the head and neck slightly retracted. She complained of violent headache, and suffered from intractable vomiting. There was oedema over the left mastoid and left temporal areas. There was a little discharge from the left ear. There was no optic neuritis. Facial paralysis, not well marked, of lower half of face was noted. There was no incontinence of urine, but there was obstinate constipation throughout. The features were expressionless, passive, and wore a meaningless smile. The pulse was on the average normal and regular. The temperature was persistently subnormal."

Operation, May 15th, 1922.—The left mastoid antrum was opened and was found to contain pus. As considerable oedema had developed over the temporal region since admission, an exploratory trephine opening was made above the external meatus over the temporal lobe. No pus was found. An opening was then made over the cerebellum 1½ inches behind the external meatus and below the lateral sinus, a flap having been previously turned up. The bone, which was thin, was scraped through with a curette till the dura mater was reached. No pus was found on either side of the dura mater. A probe was then passed an eighth of an inch into the cerebellar substance, and about 1 oz. of foul-smelling pus gushed out. The abscess cavity was gently irrigated with warm saline solution till the solution returned clear. A soft rubber drain was then led through the soft tissues to the dura, but no drain was placed in the abscess cavity. The drain was removed in two days and not replaced.

A few days later the patient complained of headache and discomfort. Examination showed some swelling over the cerebellar wound. A pair of forceps passed into the external wound and opened gave exit to a drachm or two of pus. After that recovery was uneventful.

She left the hospital on July 21st, 1922, went to work a year later, and has been self-supporting since.

Dr. A. F. Rutherford was associated with me throughout in the treatment of this case.

JOHN LIVINGSTON, M.D.Durh., F.R.C.S.Ed.,
Honorary Surgeon, North Lonsdale Hospital, Barrow.

POISONING BY EUCALYPTUS OIL.

DR. SEWELL'S case of poisoning by eucalyptus oil (BRITISH MEDICAL JOURNAL, May 16th, p. 922) reminds me of one I saw about fourteen years ago.

A young collier, who was also a pugilist, found himself on the morning of a fight suffering from a cold in the head, for which a friend advised a drop of eucalyptus oil. This unfortunately he interpreted not literally, but on the analogy of "a drop" of whisky, as understood in a colliery district in pre-war days to mean three-pennyworth. He therefore bought and consumed, as I ascertained later from the chemist, about 3 drachms of the oil, and set out for Liverpool, where the fight was to take place. During the short railway journey he fell asleep; at his training quarters he again fell asleep; having got into fighting kit and reached the ring, he once more relapsed into such profound slumber that he could not be roused, and was consequently taken back home and put to bed. I was called to him on the following (Sunday) morning. Except for a slight drowsiness he seemed none the worse; he had had no pain, and no gastric or intestinal disturbance. In fact, I think he only sent for me as a precaution in the event of any official inquiry as to his condition in the ring the night before. He resumed his work in the pit as usual on Monday morning.

Here too the effect seemed to be entirely hypnotic, but delayed much longer than in Dr. Sewell's case, probably owing to the greater age of my patient and the fact that he was in hard physical condition.

Cheltenham. PERCY C. GARRETT.

RUPTURE OF ABDOMINAL ANEURYSM SIMULATING ACUTE INTESTINAL OBSTRUCTION.

THE comparative rarity of rupture of an abdominal aneurysm renders the details of the following case worthy of publication, particularly since the symptoms resembled those of acute intestinal obstruction. My thanks are due to Dr. W. B. Wishart for permitting publication.

A cotton twiner, aged 71, was perfectly well and following his occupation until noon of April 20th, when he complained of a severe pain in his back. Persistent faecal vomiting set in two days later; constipation was absolute from the onset of the symptoms. He was admitted to hospital on April 23rd, his temperature being 96° F., his pulse 120, and his general condition very poor. The anterior abdominal wall was rigid, very tender, and dull on percussion; the rigidity and tenderness were more marked on the right side; there was no visible peristalsis and no pulsation of the abdominal wall. In view of the history and the physical findings a diagnosis of intestinal obstruction was made. At an operation performed under local anaesthesia a pulsating tumour was found lying to the right of the mid-line and suggesting aneurysm: the patient's grave condition curtailed further investigations, and he died three days after admission, and six days from the onset of symptoms. A limited autopsy was performed, when it was found that the whole of the small bowel was collapsed and lay in the left hypochondriac region. The right half of the abdomen was occupied by a large bluish-black retroperitoneal mass extending from the dome of the diaphragm down to the brim of the true pelvis. This proved to be blood clot, the source of the haemorrhage being a rupture of three fingerbreadths in the right lateral wall of a fusiform aneurysm of the abdominal aorta. This aneurysm, the size of a man's fist, extended from a point half an inch below the level of the origin of the renal arteries to a point just above the bifurcation of the aorta; the walls of the aneurysm, common iliac arteries, and the portion of the aorta proximal to the aneurysm were markedly atheromatous. The right kidney was polycystic, but no other macroscopic changes were noted in the abdominal organs. Another interesting feature was the almost complete suppression of urine.

H. JAFFÉ,
Senior House-Surgeon, Royal Halifax Infirmary.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

WESTMINSTER AND HOLBORN DIVISION.

Group Medicine in Practice.

AT a meeting of the Westminster and Holborn Division of the British Medical Association, held at 86, Brook Street, on June 11th, a paper prepared by Dr. ADOLPHE ABRAHAMS on group medicine in practice was read. In the experience of every practitioner, it was said, cases occurred which did not fall into a definite category, and in which it was difficult to decide whether the symptoms were organic or "functional," and the relative importance of psychical and physical factors had to be carefully assessed. The practitioner's chief difficulty in these cases was the preparation of a systematic scheme of treatment based upon a comprehensive view of the patient—one which, while taking into consideration all the various factors, did not emphasize any one unduly. This ideal was quite possible of achievement by team work. The elaborate scope of modern methods of diagnosis had made specialization an obvious necessity; the failure to take full advantage of special knowledge and skill was a weakness for which team work could offer a prop. A vital feature in team practice was a conference at which all the members of the team who had seen the patient were present; this conference, if convenient to himself, was attended by the general practitioner who sent the patient for investigation and would be responsible for carrying out the treatment, and at it each member reviewed his opinion in the light of those of his colleagues; in this way his individual opinion might increase or decrease in relative importance when seen from other angles; some puzzling anomaly might become quite clear when assisted by the results of another specialist's investigation; and any tendency to obsession would be neutralized by the criticisms of less partial observers; thus a composite view was obtained.

Owing to lack of co-ordination it was impossible for individual specialists, in cases where two or three factors were playing a part, to be sure that the pathological element in their own particular region was solely responsible; but a team which was so composed that its routine examination necessarily scrutinized the large majority of possible causes would not only ensure the large number of investigations in a very short time, but would, by collating all results, eliminate the danger of obsession by specialization, and yet take full advantage of each individual contribution.

The constitution of a diagnostic team might most conveniently be considered as consisting of three circles. The first, or *inner circle*, consisted of members who saw every patient as a routine procedure. Its composition was the most difficult problem in group organization. It should be as small as possible, and its members must be prepared to make many personal sacrifices and at times perform duties out of proportion to remuneration. The patient's point of view was important; the time he was prepared to give was usually limited to three days; anything not strictly indispensable must therefore be excluded. A patient was likely to object if subjected to a series of examinations which seemed to him mere repetitions. The ideal was so to systematize the inner circle that with a minimum of personnel the largest number of errors resulting from incomplete examination would be avoided. The medical director conducted all communications with the patient and his own practitioner, summarized the report from the patient's doctor, and the odds and ends of pathological and other information that might have accumulated for years; interviewed the patient, took his history, and made a general examination. The medical director could work most conveniently with the general physician of the group. At one interview the history of the case could be fully considered, the routine examination performed, and unnecessary duplication thus avoided. At this routine examination the patient was referred to the oculist, the laryngologist, and the dental surgeon. In many cases a negative report was returned, but in others the early stages of some general disorder might be discovered; only an expert was justified in saying that the area which fell within his domain was normal. The pathologist examined the blood as regards the number and proportion of the cells, the haemoglobin content, and the Wassermann reaction, and made a routine examination of the urine. The radiologist screened the cranial sinuses and the chest, and took radiograms of the teeth if instructed to do so by his dental colleague.

The *outer circle* included the pathologist, radiologist, oculist, and laryngologist in capacities supplementary to their routine work. A further advantage, the importance of which could hardly be overestimated, was that a need for special pathological investigation might be felt by the regional specialists whose interview preceded that with the pathologist. The outer circle also included a general surgeon, a gynaecologist, a neurologist, a cardiologist, a biochemist, a psychotherapist, a physician experienced in tropical diseases, a dermatologist, and a pediatrist.

The *outermost circle* was a group of very highly specialized individuals to whom patients were referred on comparatively few occasions. It included an orthopaedist and a proctologist. A physiotherapist and a balneologist were sometimes consulted rather for advice on treatment than for diagnosis. This outermost group was indefinitely extensible.

The patients who were sent for examination fell into the following categories: (1) Those who had already undergone a great deal of examination and treatment without relief but nevertheless believed that some remedy could be found for their perpetual symptoms. These would importune their doctors to try something new, and group diagnosis could at least claim to be new. (2) Those who were "seedy" rather than really ill and felt that they were unreasonably handicapped in the battle of life. (3) Those who were genuinely, if not alarmingly, ill, yet without any obvious explanation. (4) A small group with the phobia of serious disease, where it was hoped that a thorough investigation might allay anxiety. (5) A very

small group composed of patients who were very gravely ill and perhaps in the final stages of some mortal disease.

A particular symptom would rarely allocate a patient to any one of these categories, and symptoms often seemed to bear no relation to the cause. Still it was with symptoms that patients presented themselves, and for this reason the anamneses of the first 210 patients had been analysed.

The complaint most frequently made was "loss of energy": 35 patients complained of this symptom, with such variations as "tiredness," "always feeling tired," and so on. "Indigestion" was the complaint in 24 instances. Abdominal pain was the presenting symptom in 34 cases and headache in 17. It will be observed that exactly 50 per cent. of the patients were comprised under these four headings—loss of energy, indigestion, abdominal pain, headache.

Seven patients were sent up for attacks of unexplained pyrexia; 7 for depression and irritability; 7 also were victims of pathophobia; 4 feared cancer, 1 pulmonary tuberculosis, and 1 lupus of the nose. One was a false cardiopath, a qualified medical man, who had already seen over sixty doctors, including, as he himself stated, all the cardiologists famous and infamous, reputable and disreputable. It was regrettable, but hardly surprising, that he was not convinced by all our attempts at reassurance. Six patients complained of dizziness or giddiness; 5 of diarrhoea, and 5 of pain in the back—a rather unexpectedly small number for this very common symptom. Pain in one or more joints was the complaint in 8 cases. Loss of weight was the sole complaint in 4 cases; pain in the chest also in 4; cough, shortness of breath, nervousness, or vomiting, each in 3 instances. Two complained that they "always felt ill," whilst 7 could only be described as polysymptomatic, an invitation to describe their chief symptoms producing a torrent of woe in which "pains all over" almost invariably had pride of place. Three patients suffered from defective vision; 2 came for obstinate skin eruption; 2 with shaking of the limbs—both paralysis agitans; 2 with intermittent hydrarthrosis; 2, both children, with incontinence of urine. The remainder was made up of single cases of obesity, diplopia, enlarged glands, intolerable itching, soreness of the tongue, bad taste in the mouth, contraction in the throat, haemorrhage from the ears, nose, and eyes, loss of voice, swelling of the legs, swelling of the hands, numbness of the feet, stiffness of the face, pain in the groin, and fits.

Only 6 of these patients were suffering from some obvious disorder, easily detected at the preliminary examination by medical director and physician, so that any further investigation was superfluous—namely, 2 cases of paralysis agitans, a patient who complained of obesity, and cases of acne, furunculosis, and uterine fibroid respectively, the last demanding collaboration between gynaecologist and physician only to decide whether operation might be undertaken with safety. Of the rest only 31 presented serious organic disease.

One patient was suffering from acute suppurative cholecystitis, one arrived in the terminal stage of uraemia, a third had gall stones and hydronephrosis. Two patients with encephalitis lethargica presented an interesting contrast—one died in the early acute stage, the other had been ill for over twelve months with vague symptoms of exhaustion labelled "neurasthenia due to colitis of twenty years' standing." He had reached the stage of the late Parkinsonian syndrome. The other serious cases included 2 of cholecystitis, 2 of gastric ulcer, 2 of duodenal ulcer, 1 of aneurysm of the thoracic aorta, 2 of pernicious anaemia, 2 of early pulmonary tuberculosis, 1 of generalized carcinomatosis, 1 of infective endocarditis, 1 of mycosis fungoides, 1 of optic atrophy, 1 of tuberculous laryngitis, 1 of thrombosis of the pelvic veins, 1 of cerebral syphilis, 1 of pituitary tumour, 1 of malignant disease of the spine, 1 of paraplegia due to a neurofibroma of an anterior spinal nerve root, 1 of Jacksonian epilepsy, 2 of major epilepsy, 1 of tuberculous tenosynovitis, and 1 of disseminated sclerosis.

Thus approximately 80 per cent. of the patients were not regarded as suffering from any severe disease although their disorders were responsible for a great deal of unhappiness and ill health.

Few of these patients gave sufficient positive evidence of disease in a very limited field to justify therapeutic measures directed along one channel alone.

In a case of giddiness, wax in the ears proved to be entirely responsible; dental sepsis alone required treatment in 4 cases. In 4 the symptoms were due to uncorrected or improperly corrected errors of refraction. One case of headache was explained by nasal obstruction, another by Eustachian catarrh, and in a third the rhinologist and oculist agreed to divide the responsibility. But in the large majority of cases the difficulty was to assess the relative importance of psychical causes and of focal sepsis, for these two factors were in some degree responsible for the greater bulk of the symptoms.

The psychical element was prominent in 59 cases. In 28 of these the symptoms were regarded as being entirely psychical in origin or as presenting so overwhelming a psychic trend that the trivial organic elements were negligible or were best left alone. In the remaining 31, organic factors were considered to play an important part. These included endocrine disturbance, intestinal toxaemia, eye-strain, septic teeth, septic tonsils, uterine displacements, pancreatic insufficiency, chronic cholecystitis, and organic nervous disease. In 10 cases the diagnosis of vagotonia was considered. Now this diagnosis was all-sufficing to those sanguine physicians who saw a definite syndrome in overactivity of the parasympathetic nervous system, but, even if its reality were admitted, it was still uncertain whether this overactivity was determined by a primary constitutional weakness of the endocrine system or a disturbance secondary to some septic process. In any case the indications for an all-round consideration of the patient were emphasized.

Enteroptosis was diagnosed in 14 cases. Again the question was whether enteroptosis alone could produce symptoms, or was a susceptible nervous system a necessary factor? Endocrine disturbance was diagnosed in 14 cases, combined in 7 with enteroptosis, in 6 with intestinal toxaemia, and in 1 with nasal sepsis. Besides the case already mentioned where isolated infection was responsible for symptoms, focal infection was noted as follows:

Dental, biliary, nasopharyngeal, intestinal, and bladder infections in various combinations were found in 10 cases. Septic tonsils alone were regarded as responsible in 2 cases of otherwise unexplained pyrexia, in 1 case of acute nephritis, 1 of iritis, 1 of sciatica, and 3 of chronic tiredness; septic tonsils with intestinal infection were present in 7 cases. The uterus was incriminated as a sole factor in 2 cases. Secondary anaemia was the diagnosis in 4 cases. In all, intestinal toxaemia was regarded as the cause, and, from the results of appropriate treatment, probably with justice. Chronic appendicitis was the diagnosis in 5 cases, and the diagnosis of a post-operative abscess was made and confirmed in a patient who had been operated upon for appendicitis eight months previously. Congenital defect of the colon was the radiographic report in one case, a diagnosis which otherwise could not have been made, but which certainly fitted in with the clinical picture. Spasm of the colon was seen twice, in both instances evidently as a functional condition of the gut after tropical dysentery. Atonic dyspepsia was diagnosed on five occasions, hyperchlorhydria on three. Hyperthyroidism as a plain diagnosis appears twice only, dyspituitarism once, and myxoedema not even on one occasion.

Finally, group diagnosis contained a nucleus of very great value for research. Much had been written on the importance of preventive medicine and the urgency of recognizing disease in its earliest stage. It was only in some scheme of group diagnosis that real hope of this early recognition resided. In such a scheme justification was found for the insistence on routine examinations, some of which were negative and apparently of no importance so far as the present day was concerned. A different prospect opened up when the value was realized of documentary evidence that certain symptoms or signs were present or absent at an expert examination five or ten years previously. Such investigations on a large enough scale could hardly fail to discover certain common denominators to act as signal posts; and it was possible that by such exhaustive investigations the cause of many obscure diseases might be revealed, perhaps even that of malignant disease itself.

Demonstrations.

Dr. JOEKES and Dr. S. GILBERT SCOTT gave a joint demonstration of passing the duodenal tube to draw off the contents of the gall bladder for diagnostic purposes. By means of the *x* rays the tube could be watched passing down into the stomach, and through the pylorus into the duodenum. Its exact position in the duodenum could be checked. By injecting air through the tube it was possible to demonstrate the gall bladder, and in this way to assist in the detection of gall stones. In other cases the opaque (barium) emulsion, as used in gastric work, was injected direct into the duodenum; this method sometimes gave valuable results. It was pointed out that conjoint work in diagnostic research was a great asset, and was best achieved where a number of specialists were working together in one building in close touch with each other.

Mr. MORSON gave a demonstration illustrating the use of pyelography in the diagnosis of renal disease.

Reviews.

A GERMAN TEXTBOOK OF HUMAN PHYSIOLOGY.

IN the fourth edition of ZUNTZ and LOEWY'S *Lehrbuch der Physiologie des Menschen*[1] the gap in the editorial staff occasioned by the death of Professor Zuntz was filled by Professor W. TRENDELENBURG, who also has since died. Many physiologists in Germany, Austria, and Sweden have written sections dealing with those special branches of the subject to the knowledge of which each has contributed, or in which each is particularly interested. The book appeals therefore at once as an authoritative work, and yet at the same time it has not succumbed to the danger of losing its unity and individuality—a danger always imminent to the production of such a volume.

There are, however, several points to which perhaps criticism may be directed with advantage. In the chapter on the morphology and chemistry of the blood no mention is made of the physiological variations in the numbers of leucocytes with age. The omission is common in textbooks of physiology, although a knowledge of the normal figures is necessary for the clinical interpretation of blood counts in diseases of childhood. The statement is made in the following chapter that adrenaline has no action on the pulmonary blood vessels. It is, however, a well known experimental fact that when this drug is added to the isolated heart-lung preparation a well marked rise in pulmonary pressure ensues. This is interpreted as being due to vaso-constriction in the pulmonary area—an interpretation which is quite justified in the absence of proof that it can be accounted for entirely by the concomitant increase in coronary flow. On page 213 the hot wire sphygmograph might have been included with advantage as affording a simple and accurate means of determining pulse-wave velocities. Neither is attention directed to the auscultatory method of determining systolic and diastolic pressures in man.

A short chapter is devoted to the physiology of lymph. The salt content of this is stated to be higher than that of the serum (0.426 per cent. chloride in the lymph against 0.396 per cent. in the serum). It was shown, however, by Cohnstein that this discrepancy was due to the serum solids not being taken into consideration in the estimations, and it is clear from the figures that a difference of 7 per cent. in the total solids of serum and lymph would account exactly for the difference of 0.03 in the percentage of chloride. In any case the discrepancy seems too large to be accounted for solely by a membrane equilibrium, as is suggested on page 226. In the same chapter an obvious misprint occurs on page 228, where 0.5 to 0.75 per cent. is said to be the quantity of reducing substance in the cerebro-spinal fluid. In the paragraph describing Humphry Davy's method of determining residual air it should, for the sake of clarity, have been mentioned that rebreathing the indifferent gas must begin at the end of deepest expiration.

The chapter on urine and urine secretion falls below the general standard of excellence of the remaining chapters of the work under review. Many inaccurate statements and several important omissions are to be noted. We do not like to think of "ausgespuckter Speichel" as being a normal means of water elimination. In directing attention to the inability of the kidney to retain chloride absolutely even when this salt is being lost to a large extent through excessive sweating, it would seem desirable to mention the symptoms which are liable to ensue when the thirst is quenched under these conditions by copious draughts of water. Again, in dealing with the excretion of phosphorus, lactacidogen is mentioned without any explanatory qualification. Anyone who has used the urease method extensively will take exception to the statement on page 345 that "an exact and at the same time convenient method of estimating urea in urine does not exist."

On page 350, and again on page 354, the statement is made that "it is sufficient to cut off the arterial supply to the kidney for one minute to bring about cessation of urine secretion for one hour." The true interpretation of this old observation of Heidenhain has been shown comparatively recently by Marshall to be that a reflex vaso-constriction is caused by pressure on the renal sympathetic twigs during the compression of the artery. If this is zealously avoided no anaemia follows the compression. Recent work again has made it possible to state definitely that the action of phlorhizin on the kidney is to cause it to secrete the sugar presented to it in the blood, and that there is no need to assume that the kidney manufactures a part of the sugar out of a precursor, as is suggested on page 351. The statement "If the kidney is excised and perfused . . . a free urine secretion is no longer observed" should be qualified in that whether or not this happens depends on the method of perfusion. If a heart-lung preparation is used as the propulsive mechanism a copious flow of urine is obtained.

Exception must also be taken to the remark that stimulation of the vagus leads to an increased flow of urine. The statement is based on Ascher's work, but anyone who has read the paper by Ascher and Pearce on this subject cannot fail to reach the conclusion that no evidence whatever in favour of a direct action of the vagi on the kidney has been produced by them. Again, a blood dilution cannot be stated to be the cause of water diuresis in the presence of experimental evidence that no hydraemia accompanies it.

In directing attention to the condition of diabetes insipidus in man it would have been instructive to have mentioned the specific antidiuretic action which extracts of the infundibular lobe of the pituitary body have in this disease. Several other points in this chapter call for comment. The vascular supply to the tubules is stated erroneously to be derived partly in a direct manner from the renal arteries—that is to say, without previous passage through the glomeruli. Fig. 102 would be more truly representative of the anatomical conditions obtaining in the kidney if the vas efferens were coloured red rather than blue. The centres for reflex micturition are not in the lumbar and sacral cord, as stated on page 363, but are situated in the mid-pontine region.

The defects to which attention has been directed, however, will appear small in comparison with the many excellent qualities the book possesses. It is a pleasure to see a section devoted to the local regulation of the number and width of the capillaries, and extremely useful and instructive to be presented with an exhaustive table giving the gross analysis and calorie value of foodstuffs used by man.

The illustrations and printing are excellent, and both authors and publishers are to be congratulated on the production of the fourth edition of this well known textbook.

[1] *Lehrbuch der Physiologie des Menschen.* Herausgegeben von W. Trendelenburg und A. Loewy. Vierte Auflage des Lehrbuches von Zuntz und Loewy. Leipzig: F. C. W. Vogel. 1924. (Sup. roy. 8vo, pp. xiv+789; 280 figures, 2 plates.)

WHEELER'S "OPERATIVE SURGERY."

SIR WILLIAM WHEELER'S *Handbook of Operative Surgery*[2] is passing through a stage previously reached by earlier works on the same subject. Originally a manual for students performing operations on the dead body in preparation for examinations, it is being transformed into the nucleus of a good work on operative surgery for young surgeons. Such a change is easily explicable, for circumstances connected with the restricted supply of bodies have effected an alteration in the courses of instruction that was overdue; Farabœuf's point of view is no longer that of the operating surgeon. So it comes about that the first fifteen pages of the volume are devoted to methods of anaesthesia, largely "local." Ligature of arteries, as an anatomical exercise, occupies fifty pages; this is followed by an account of blood transfusion, and so on. Some sections of the book are very much up to date—for example, Fraser and Dott's method of aseptic anastomosis is described; others—for example, that on cleft palate—hardly embody the latest practice. Sometimes, as in the case of empyema, the "operative" surgery includes a good deal of after-treatment; space is devoted to Frank's gastrostomy which is disproportionate in view of its limited

[2] *Handbook of Operative Surgery.* By Sir William Ireland de C. Wheeler, B.A., M.D.Dub. Univ., F.R.C.S.I., F.A.C.S.Hon. Fourth edition. London: Baillière, Tindall and Cox. 1925. (Demy 8vo, pp xvi + 441; 298 figures. 15s. net.)

application (there is a mistake in the legend of Fig. 231); a student might gather that Finney's operation is used for congenital stenosis. The distribution of the illustrations is uneven: two figures are devoted to the cure of persistent vesical fistula and there are none to accompany the account of abdominal hysterectomy. But, as we have said, it is a book in transition.

STATICS OF THE FEMALE PELVIC VISCERA.

IN the second volume of *The Statics of the Female Pelvic Viscera*[3] Dr. R. H. PARAMORE continues the study of the subject to which he has devoted so much painstaking attention. In the first volume, it will be remembered, he discussed the question as to how, from the anatomical and physiological points of view, the pelvic viscera are supported in position in the pelvis. In this volume he presents the evidence gleaned from the history of a century of operative treatment. The volume is divided into four parts. The first deals with the inception of plastic procedures, Marshall Hall's operations, the vaginal pleating operations of Jobert, elytrorrhaphy and cauterization of the vagina, extirpation of the womb, and Baker Brown's operation. The second part is entitled "The rise of plastic procedures: the amputation of the cervix and perineorrhaphy." Here the work of Huguier, Rizzoli, Kückler, Duncan, Milne, Bantock, Tait, Thomas, and Emmet is reviewed. Part 3 discusses the "Rise of vaginal operations and the confusion and scepticism of the eighth decade." It covers the work of Marion Sims, Whitehead, Duncan and Hart, Hegar, Emmet, Hewitt, Le Fort, and describes their methods of treatment. The last part brings the review down to 1899 and deals with colpo-perineorrhaphy, and the conception of prolapse as a hernia. The operations of Simon, Hegar, Martin, Bischoff, Winckel, Pozzi, Garrigues, Hart and Barbour, Kelly, Herman, and others are described and discussed.

As a contribution to the history of gynaecology this volume of 400 pages of fairly close print is of interest and value. As an argument in favour of the author's conception of the causation of prolapse—which, briefly, is that it is due to a loss of equilibrium in the realm of abdomino-pelvic dynamics—it is too long and too elaborate. Few operating gynaecologists will, we suspect, have the industry to read through a book of this size, and it is doubtful whether those who do will find that they have reached any definite destination at the end of it. Our frank opinion is that Dr. Paramore has rather confused the issue by the prolixity of his discussion. All through he gives the impression that he believes himself to be practically the only gynaecologist with anything like a correct conception of prolapse. His position is, indeed, like that of the proud old mother, who, when watching her son's regiment march past, remarked, "They're a' oot o' step but oor Jimmy." With great earnestness Dr. Paramore reviews the opinions and methods of the array of distinguished gynaecologists whose names have been already mentioned. He deals faithfully with them, one and all, exposing the fallacies of their views and assessing the contribution which they made to the development of the modern conception of prolapse and of the present lines of treatment. He is unsparing in his analysis, as will be seen from the following quotation from his introduction.

> "Opinion to-day is transitional, uncertain, unbalanced. Many operating gynaecologists, it must be admitted, as far as prolapse is concerned, appear in doubt, are indefinite in their utterances, take refuge in ambiguities, and often are clearly at sea. They teach the maxims of the schools and teach them sedulously and with conviction—dogmatically, tenaciously, as scholasticism insists. But these maxims, when examined, are but simulacra of truths; they are the results of tradition, erroneous reasonings, and empiricism. The doctrines they embody are contradictory, equivocal, evasive, mystifying. They lead to blind ends, and confusion. They divorce prolapse as a disease from general biological laws. They lead to no unity of thought—that man is individual. Frank avowals of this are rare, but occur—few men willingly admit their difficulties."

Dr. Paramore is evidently one of the few, for on page 362, after stating that "Garrigues seems to have got into a muddle," he adds the refreshing footnote, "I was in a muddle *once* myself." (The italics are not in the original.)

One other quotation will show exactly the attitude taken up by Dr. Paramore: "The cause of prolapse is scarcely known or taken into account by the majority of operating gynaecologists." This being so, it is difficult for a modern gynaecologist to attempt to review the book, nor indeed is it necessary to say more. It would be easy, but unfruitful, to criticize various points in the volume, but enough has been shown to indicate the scope of the work and its praiseworthy intention.

[3] *The Statics of the Female Pelvic Viscera.* Vol. II. By R. H. Paramore, M.D.Lond, F.R.C.S.Eng. London: H. K. Lewis and Co., Ltd. 1925. (Demy 8vo, pp. xx + 424; 58 figures, including 35 plates. 24s. net.)

MARY PUTNAM JACOBI.

THE *Life and Letters of Mary Putnam Jacobi*,[4] edited by RUTH PUTNAM, gives the very human story of a pioneer, who was to the women of America what Elizabeth Blackwell, Sophia Jex-Blake, and Elizabeth Garrett Anderson were to the medical women of England. Mary Putnam encountered difficulties similar to theirs in breaking into the profession, and, like them, she succeeded, in spite of opposition that none but exceptionally well endowed women could have overcome.

The book relates incidents of her childhood, quotes letters in which she recounts her life in Paris as a medical student, records her professional activities in New York, her married life, and her death. Her father was the founder of G. P. Putnam's Sons, the famous publishing firm, and it was during his early endeavours to establish an English branch that Mary Putnam was born in a house in the Euston Road in 1842. When she was 6 years old the family returned to New York.

One of the striking features of her father's attitude to his children was his endeavour to induce them from an early age to think and act for themselves. The spirit of self-dependence fostered by her father determined her career, in spite of initial lack of encouragement from both parents. For three years she studied chemistry intermittently at the New York College of Pharmacy, and received a degree in 1863. Later in the same year she was entered as a student in Philadelphia at the Women's Medical College of Pennsylvania, and received a doctorate the following spring. She obtained some hospital experience in Philadelphia, and then went to the New England Hospital in Boston, where she worked for some months. Various "openings" were then suggested for her, but she hoped to begin private practice in New York. The assassination of Abraham Lincoln and the conclusion of the great Civil War occurred about this time, and these events probably combined to carry thoughts to national planes and inspire great ambitions in confident and earnest minds.

Mary Putnam found that Dr. Elizabeth Blackwell and her sister had already in their own country gone far in their medical work. They had succeeded in establishing a dispensary and infirmary in which women who had obtained some medical education could obtain clinical instruction. The available experience was inevitably very meagre, and Mary Putnam decided that not only was it insufficient, but that she must aim at the best obtainable.

Her father's hope that she would find ample scope for her mental activities without leaving the family circle was disappointed, and in September, 1866, she set sail for Havre. She was then in her 24th year, and possessed by the resolve to enter the École de Médecine, and, if determination and the will to succeed might be rewarded, to obtain the doctorate. Her letters from France, full of a vital interest in all the affairs of her daily life, were written with the intention of enlivening her mother's life, at that time narrowed and uneventful. The first six months in Paris were spent at the Lariboisière and the Salpêtrière, but in January, 1868, she was admitted to the École de Médecine; she was the first woman to gain admission. From then on her career was attended by every scholastic success. The same confidence as characterized her earlier years was evidenced in all she undertook. Her studies were carried on during the momentous events of the Franco-Prussian war, the deposition of an emperor, and the revival of a

[4] *Life and Letters of Mary Putnam Jacobi.* Edited by Ruth Putnam. New York and London: G. P. Putnam's Sons, The Knickerbocker Press. 1925. (Med. 8vo, pp. xi + 381; 9 plates. 15s. net.)

republic. In July, 1871, she completed her examinations, and her thesis gained the highest commendation—"extrêmement satisfait." She frequently met Miss Garrett (Dr. Garrett Anderson), who was doing post-graduate work in Paris, and often mentioned her in her letters home.

Just before her final examination she received an urgent request from Dr. Jex-Blake, then in Edinburgh, to go to Edinburgh to prepare the women students for the examinations in anatomy. Mary Putnam, after prolonged consideration, felt that the time had come when the claims of home must be recognized, and so regretfully refused this offer. By the end of 1871 she was back in New York, now fully qualified in her profession, and still only 29. She was immediately admitted as a member of the Medical Society of the County of New York. The president of the society who bade her welcome was Dr. Abraham Jacobi, her future husband. She was appointed professor in the Women's Medical College, and immediately took up her duties. The lack of scholarly foundation and mental equipment which she found in her students surprised her, and in a moment of impatience she felt disposed to resign her appointment. An encouraging letter from Dr. Elizabeth Blackwell, then living in England, counselled prudence and patience, and persuaded her to remain and do her best.

In 1872 the happiness of the Putnam family was clouded by the sudden death of George Putnam. He had been ever ready with understanding sympathy with his children, even when their desires and ambitions were greatly in advance of his epoch. The following year Mary Putnam was married to Dr. Abraham Jacobi, and the next ten years were passed in happy home life and in professional duties, which she still pursued with unabated ardour. The tragedy of their life was the death of their son in 1883. The one remaining daughter became doubly precious to her mother, who gave up much time to supervising her education.

In 1888 she resigned her chair in the Women's Medical College, and gave more time to private practice. She was an ardent advocate of woman suffrage, and did much to forward the cause. After six years of invalidism, during which her mind continued active in spite of great physical disability, she died on June 10th, 1906. "She filled the time allotted to her so full of work, of affection, of helpfulness, and of hopefulness that its tale of existence is not recorded in its calendar days. That in so doing she widened the scientific outlook for all women may be counted as sufficient achievement to give her honour."

GUY'S HOSPITAL REPORTS.

THE first place in the new number of the *Guy's Hospital Reports*[5] is given to Mr. R. P. Rowlands's admirable "In Memoriam," with a characteristic photograph, of that arresting personality W. H. A. Jacobson, who did good by stealth, was a devoted friend to Guy's students, a wonderful teacher for twenty-four years in the out-patient room, and withal was very human and full of apparent superficial contradictions, mannerisms, and eccentricities. Of the nine other articles two are distinctly medical and the others surgical or dealing with specialties. Sir Charters Symonds describes the evolution of the short tube for the treatment of oesophageal stricture he invented about forty years ago with the help of his then dresser, Mr. B. Campbell Gowan. It cannot be often that father and son have written articles in the same volume, and rarely, if ever, in the same quarterly instalment, of these reports; on a basis of physiology and common sense Dr. C. P. Symonds writes clearly on the etiology and classification of the common neuroses which are divided into the anxiety neuroses, hysteria, and neurasthenia. An article on nervous symptoms due to alkalaemia and renal insufficiency following obstruction in the region of the pylorus, and the alkaline treatment of duodenal ulcer, is introduced by the editor, who, after mentioning the discarded hypotheses of the causation of gastric tetany, points out that the two principal factors are alkalaemia, shown by low chloride and high bicarbonate content of the blood, due to the loss of hydrochloric acid entailed by vomiting, and renal insufficiency, as shown by the excess of urea and creatinine in the blood; three groups of cases are then described, by Mr. L. W. Houghton, Dr. J. F. Venables, and Mr. N. L. Lloyd respectively, presenting uraemia following obstruction near the pylorus, alkalosis due to the alkaline treatment of duodenal ulcer, and pyloric obstruction with alkalaemia and renal insufficiency but without nervous symptoms. The 425 gall-stone cases admitted into Guy's Hospital between 1895—when gall-stone surgery began—and 1915 are analysed from a surgical point of view by Mr. W. E. Tanner, who concludes that while the mortality of cholecystotomy and cholecystectomy is the same, the experience that 9 per cent. of the patients who have undergone cholecystotomy may require a second operation does not justify the increased immediate risk of removing the gall bladder in every case. A method of treating grave peritonitis is described by Mr. J. Gaymer Jones; the affected area of the peritoneum is slowly irrigated by saline solution, introduced by a Carrel tube at the rate of one drop a second, and removed, together with exudate, by suction into a Woulfe's bottle. Meningitis of nasal origin is the subject of an article by Mr. W. M. Mollison, who has fortified his own experience by numerous references to other authorities. Mr. Vernon E. Lloyd contributes a clinical study of polypi of the prostatic urethra and their relation to chronic prostatitis, and Mr. Philip Turner analyses the results in fifty cases of trans-septal orchidopexy for imperfectly descended testis.

[5] *Guy's Hospital Reports*, vol. 75 (vol. 5, fourth series), No. 2, April, 1925. Edited by Arthur F. Hurst, M.D. London: Wakley and Son (1912), Ltd. 1925. (Med. 8vo, pp. 125-248; 1 full plate, 16 figures. Annual subscription £2 2s. for volume of four parts; single numbers 12s. 6d. each.)

NOTES ON BOOKS.

IN his book, *Food and the Family*,[6] Professor V. H. MOTTRAM has succeeded in explaining a modern physiologist's views about diet in an unusual way. The book is intended for the lay reader, and its object is to translate into ordinary language the knowledge of food economy and food hygiene gained by recent scientific research. The translation is enlivened by many epigrams, and the whole tale told in a breezy if not always soberly accurate fashion. To give an example—speaking of the food value of eggs, Professor Mottram says:

"Adulation of eggs is absurd. Someone has even applied—a doubtful compliment—the following to them:

> 'Treasure-houses, wherein lie,
> Locked by angel's alchemy,
> Milk and hair and blood and bone.'

Were they like dukes in King Goodheart's days, three a penny, their praises would be sung by every writer on food. But they are extremely dear and should be left to millionaires, invalids, and children" (p. 212).

The second chapter, entitled "Some food fads," gives a very fair, albeit sprightly, discussion of such cults as vegetarianism and Fletcherism, and pauses to weigh the pros and cons of alcohol. In the ninth chapter the food values of a number of common foodstuffs and their value as sources of the elements of a diet are impartially considered. There are two questions about food which seem to be disturbing many people at present—first, in what types of food are vitamins present and which vitamins are where? and, second, how do the physiological values of certain types of food compare with their market price? Both these questions are well answered in this book, which we think will serve a very useful purpose in translating the cold logic of the physiological laboratory into attractive and readable journalism.

Roentgen Diagnosis and Therapy,[7] by Dr. ARTHUR C. CHRISTIE of Washington, U.S.A., is an elaboration of a book by the same author published during the war. In the first sixty odd pages we have a very concise description of apparatus, of the dark room, of the *x*-ray tube, and of electrical terms. It is an admirable introduction to the subject and is written in very plain and simple language. To this succeeds the main portion of the book, which is a rapid survey of *x*-ray diagnostic work, and very largely depends for its value on the numerous radiographs by which it is illustrated. On the whole these are sufficient for their purpose, even if some of them are not very good, having, it would appear, lost not a little in reproduction. The letterpress is clear, and the points of differential diagnosis are well stressed and distinctly

[6] *Food and the Family*. By V. H. Mottram, M.A. London: Nisbet and Co., Ltd. 1925. (Cr. 8vo, pp. xiii + 240; 3 figures. 5s. net.)

[7] *Roentgen Diagnosis and Therapy*. By Arthur C. Christie, M.D., M.S., F.A.C.P. London: J. B. Lippincott Company. 1925. (Med. 8vo, pp. vi + 320; 189 figures. 25s. net.)

indicated. The short chapter on therapy, without going into any detail, is sufficient for its purpose. In the preface the author states that his aim has been to furnish to the student and practitioner a concise account of the essentials of radiology and a practical guide to the subject. He also lays great stress upon the fact that the foundation for success as a radiologist is "good technical work"; without this no *x*-ray work can be really successful, although of course it does not follow that one who relies upon this alone is a good radiologist. We can confidently recommend this book to the beginner, and also to the general practitioner who wishes to have some knowledge of the present position of *x*-ray diagnosis.

We received some time ago a copy of *Chinese Grammar Self-Taught*,[8] by Dr. JOHN DARROCH, and it may be worth while to give a short account of it even at this late date. The author has endeavoured to exhibit the structure of this picture language in terms of the grammar of European countries. For this reason the book should be useful to those who may be led to practise in China. It should be entertaining, also, to others, though they may not feel called upon to study the oldest Chinese medical work containing the plain questions of the Yellow Emperor Su Wên, 2698–2598 B.C.; nor to investigate the actions of the 1,892 drugs contained in the Herbal of Li Shih-chên, which included certain remedies called "sovereign," as certain others were formerly called in this country. The development of the simple pictures of objects into the elaborate modern Chinese characters is set forth interestingly by Dr. Darroch; and the beginner will marvel at the number of these characters required to express a simple short sentence.

Although Mr. COMYNS BERKELEY'S *Handbook of Midwifery for Midwives, Maternity Nurses, and Obstetric Dressers* has not yet attained its majority, yet a sixth edition[9] has been called for. This little book is so well known that nothing need be said specially to commend it. The most important change in this edition is the recasting of the chapters on artificial feeding and on the care of premature infants, which have been altered in accordance with the most modern views. The book is of a very convenient size and forms a thoroughly sound guide for all those for whom it is designed.

EDELMANN'S *Text-book of Meat Hygiene* has now reached a fifth edition,[10] which has been prepared by Dr. MOHLER, Chief of the United States Bureau of Animal Industry, and Dr. EICHHORN, Director of the Veterinary Department in the Lederle Antitoxin Laboratories. The book is based on the regulations governing meat inspection in the United States. An account is given of the methods of laboratory examination for detection of harmful preservatives and adulterants. Chapters are devoted to the examination of prepared and preserved meat, to meat poisoning, to the preparation and control of meat-food products, and to their chemical analysis. Abattoirs and stockyards, including those at Chicago, are described. The illustrations are well done and the volume gives a full account of the meat industry as developed in the United States.

[8] *Chinese Grammar Self-Taught.* By John Darroch, Litt.D., O.B.E. Marlborough's Self-Taught Series. London: E. Marlborough and Co. (Cr. 8vo, pp. 150. 6s. net; cloth 7s. 6d. net.)

[9] *A Handbook of Midwifery for Midwives, Maternity Nurses, and Obstetric Dressers.* By Comyns Berkeley, M.A., M.C., M.D.Cantab., F.R.C.P.Lond., M.R.C.S.Eng. Sixth edition, enlarged. London and New York: Cassell and Co., Ltd. 1924. (Pott 8vo, pp. xii + 578; 74 figures. 8s net.)

[10] *Text-book of Meat Hygiene.* By Richard Edelmann, Ph.D. Fifth edition revised by John R. Mohler, A.M., V.M.D., and Adolph Eichhorn, D.V.S. London: J. and A. Churchill. 1925. (Med. 8vo, pp. vi + 478; 161 figures. 25s. net.)

MEDICAL AND SURGICAL APPLIANCES.

An Invalid Appliance.

SIR ROBERT C. BROWN (Preston) writes: About a month ago, while opening and closing a drawer in my dining-room sideboard, the idea occurred to me that much benefit and comfort might be obtained by sick persons and chronic invalids by adapting a similar sliding arrangement to what is known as "the bed-pan." The provision necessary for carrying out what I suggest is: (1) A hole of sufficient size and suitable shape in the mattress and wire sheeting on which it lies. (2) A sliding shelf to which the bed-pan is affixed. (3) A frame standing on four legs, like an ordinary chair, in which the shelf can be applied or withdrawn. At the end of each leg is a castor or small swivelled wheel, and this enables the nurse or attendant to push under or withdraw the shelf containing the bed-pan from the hole in the mattress and wire sheet. (4) A simple mechanical arrangement working with a handle and screw for placing in position *from below* the cover for the hole in the mattress and wire sheet, and taking care that it fits accurately so that the patient does not experience any edge, ridges, or projections.

INTER-STATE POST-GRADUATE ASSEMBLY OF AMERICA.

THE ULSTER VISIT.

AT page 1150 last week we gave a brief account of some of the proceedings in Northern Ireland. About four hundred of the visitors arrived in Belfast on the evening of June 11th: extensive arrangements had been made to give them a hearty reception and a warm welcome. Some of the wives of the medical men had made preparations for the ladies of the party to enable them to see the town, and a room was kindly kept by the Central Y.M.C.A. as a rendezvous. Excursions left each day for some of the more distant sights: Portrush and the Giant's Causeway were favourite selections. On the morning of June 13th the second half arrived, and the first left.

Professor Lindsay, chairman of the board of management of the Royal Victoria Hospital, received each section in the King Edward Hall and offered them a hearty welcome to hospitals in the city: they looked upon it, he said, as a compliment to the city and to the medical school, and hoped their all too brief stay would be to them a source of pleasure and satisfaction, and leave behind agreeable and lasting memories. Ulster had many ties with the United States and Canada; it had given of its best to them: ten of their Presidents were said to be of Ulster lineage, and one of the most illustrious Governor-Generals of Canada, the late Lord Dufferin, came from their midst. The visitors came, not as strangers, but as friends and comrades united by many ties, influenced by common ideals, and engaged in the common work of endeavouring to alleviate human suffering: their visit was one of the many signs that science was becoming international and knew no race or creed. Professor Lindsay then gave a brief account of the hospitals in Belfast, and drew attention to the special features of the Royal Victoria Hospital, its plenum system of ventilation and its organization; as regards the former, after twenty-two years' experience they were pleased with it as an unqualified success, both as to purity of air and smoothness of working. The chairman of the medical staff (Mr. Mitchell) joined in offering their warmest welcome.

The visitors then attended the pathological, electrocardiograph, blood, clinical, laboratory, bacteriological, and radiological demonstrations, the operations and the lectures that had been arranged for the forenoons, both in the Royal Victoria Hospital and also in the Mater Infirmorum Hospital, the special hospitals, and the Municipal Fever Hospital, the Purdysburn Villa Colony, and Graymount Hospital for Tubercular Children and Open Air School. An excellent little booklet had been prepared so that the visitor could tell at once what was on, and the actual operation was posted up on the notice board. It would be impossible to give all the items of the operations, demonstrations, and lectures, as nearly every member of the various staffs did something, and the visitors had an opportunity of seeing the full working of the clinical side of the medical school, which is one of the largest in the United Kingdom.

The Lord Mayor of Belfast, Sir William Turner, received the members of the Assembly and their friends in the City Hall on the afternoon of June 12th, and offered them the welcome of the city, with wishes for a pleasant and happy stay. On Saturday afternoon, Lord and Lady Londonderry delightfully entertained the members of the Assembly at a garden party at their beautiful residence, Mountstewart, The Ards, co. Down, where the combination of fine weather, charming gardens with a perfect blaze of colour, old woods, and rare trees, the noble mansion, and the near proximity of isle-studded Strangford Lough, formed a scene that one may be sure will not soon be forgotten by the guests. On Monday afternoon, June 15th, the members of the Assembly were entertained by the Prime Minister of Northern Ireland, Sir James Craig, at a garden party at his residence, Stormount Castle. Unfortunately, Sir James and Lady

Craig were detained in London; but everything joined in carrying out the kind wishes of the host and hostess for a beautiful and pleasant afternoon in the entertainment of their guests.

VISIT TO MANCHESTER.

Some of the members of the Assembly who had been in London the previous week visited Manchester on June 8th-10th. About 160 were accommodated in Manchester itself, and another 100 who stayed in Southport were attached to the Manchester group. The mornings of the three days were devoted to hospital visits, the afternoons of Monday and Tuesday to series of short lectures at the University and the Royal Infirmary respectively. The lectures were given as follows:

Mr. G. Jefferson: The diagnosis of Jacksonian epilepsy. Professor G. R. Murray: Success and failure in organotherapy. Professor E. D. Telford: Formation of bone in soft parts. Professor J. S. B. Stopford: Some investigations of sensation. Sir William Milligan: Infective labyrinthitis; its role in the production of otitic meningitis and its surgical treatment. Dr. J. C. Bramwell: Arterial insufficiency. Professor W. W. C. Topley: The experimental study of epidemics. Professor A. Donald: Gynaecology in Manchester. Professor A. H. Burgess: Symptomless haematuria. Mr. Harry Platt: The surgical treatment of arthritis deformans.

Messages of welcome were given by Mr. Fiddes, the Pro-Vice-Chancellor of the University, and by Mr. Goldschmidt, the chairman of the board of the Royal Infirmary. Most of the hospitals, general and special, were open to the visitors, and among other institutions Monsall Fever Hospital and the group of tuberculosis sanatoriums and colonies in Cheshire attracted some of the visitors. The Royal Infirmary, owing to its size and modern construction, naturally received much attention. The Lord Mayor, who had returned from the Continent with this special object, gave a soirée at the Town Hall on Tuesday evening. On Tuesday and Wednesday the American visitors were entertained to lunch at the Midland Hotel by the Manchester Branch of the Anglo-American Society, and by the staffs of the Manchester and Salford Hospitals respectively. After the latter lunch Dr. Mayo laid on the Manchester war monument a wreath given by the Assembly. For the non-medical members of the party a trip on the Ship Canal and visits to the Rylands Library, Chetham's Hospital, Haworth's cotton mill, and the Royal Exchange at the time of "high change" were arranged.

The visitors expressed themselves well pleased with their stay in Manchester. The arrangements for their welcome were in the hands of a reception committee whose chairman was Sir William Milligan, and honorary secretary Dr. E. Bosdin Leech.

VISIT TO GLASGOW.

Under the auspices of the Glasgow Post-Graduate Medical Association preparations had been in progress for some time past for this noteworthy event. A period of only two days was allotted to Glasgow in the very comprehensive tour which has been undertaken by this large body of American and Canadian medical men, and for these days a full programme had been arranged.

The forenoon and afternoon of June 16th were occupied with clinics and demonstrations at the various hospitals and infirmaries, both general and special, throughout the city, and these opportunities for clinical work were largely taken advantage of by the transatlantic visitors. In the evening they were the guests of the University of Glasgow at a conversazione in the Bute Hall, where they were received by Principal Sir Donald MacAlister, Bt., and Lady MacAlister. A large company, representative of town and gown, assembled to take part in welcoming the visitors from overseas. In the course of the evening Sir Donald MacAlister, in the name of his colleagues in the medical school of Glasgow, bade them welcome to Scottish soil and to Scottish hearts, and, in the name of the General Medical Council, of which he has been president for over twenty years, assured them of the hearty and brotherly welcome of the profession at large. He referred to the leader of the Assembly, Dr. Charles H. Mayo, as the leader of this new crusade of Knights Hospitallers, and informed him that the motto of the Mayos in Scotland was *E cruce salus*. Sir Donald referred to the many historic names which appeared in the list of the University's famous teachers of medicine and surgery, from Cullen and Black, Smellie and Hunter, down to Lord Lister, who had there wrought out the principles and practice of antiseptic surgery, so brilliantly applied in the relief of suffering by American surgeons. In his reply, Dr. Mayo gracefully acknowledged how much the science of medicine owed to the University of Glasgow for its modern development, and he expressed on behalf of the visitors their appreciation of the very comprehensive and varied clinical fare provided that day by the Glasgow Medical School. He said that when they returned to America they proposed to report to their associations, and with the scientific information they would circulate they would broadcast also their sense of the friendship which had been shown to them in this country. Thereafter, in the name of his colleagues, he bestowed honorary membership of the Inter-State Post-Graduate Assembly upon Principal Sir Donald MacAlister, Mr. Archibald Young, Regius Professor of Surgery in the University of Glasgow, and Dr. James Carslaw, Secretary of the Glasgow Post-Graduate Medical Association. Throughout the evening a musical programme was submitted, and was heartily appreciated.

On June 17th the visitors engaged in a tour to Loch Lomond and the Trossachs; on their return they attended a civic reception in the City Chambers, where they were received by Lord Provost M. W. Montgomery and Mrs. Montgomery, and the magistrates. In his speech of welcome the Lord Provost referred to the record of the City and University of Glasgow in medical research and in the advancement of medicine and surgery, and to the mutual benefit which must result from such international meetings in medical matters, and also to the good influence which such gatherings must exert in the development of mutual understanding and in strengthening the ties of Anglo-American friendship. Dr. Mayo, in replying, expressed their appreciation of the hearty welcome which had been extended to his party in Glasgow, a city which had powerful attractions for medical men as a shrine of the great Lister, and as a centre of modern development in medicine and surgery. Not only had they derived great scientific advantage from their visit to this country, but he believed that their visit would do a great deal to maintain the growing harmony between the two great English-speaking peoples. Dr. William B. Peck also replied on behalf of the guests, and humorously remarked that if the doctors they had left behind in America realized what they had missed there would not be sufficient ships on the Atlantic to bring the next invasion of the members of their association. The formal reception was followed by dancing in the banqueting hall, and a concert in the council chamber. The company present numbered about 1,000, and included many of Glasgow's prominent citizens.

VISIT TO EDINBURGH.

The members of the Assembly, after a visit to various schools in the English provinces, to Dublin and Belfast, and to Glasgow, reached Edinburgh on June 18th.

About 400 members of the party assembled in the McEwan Hall, where the degree of LL.D. was conferred upon Dr. Charles Mayo. The McEwan Hall was well filled by members of the public and by students as well as by the party of American visitors. Sir Alfred Ewing, Vice-Chancellor of the University, who presided, said it was a pleasant duty for him to express, on behalf of the University, a welcome to them as representatives of the great medical association, the Inter-State Post-Graduate Assembly of America. He hoped they would feel in a special sense at home in Edinburgh. They all knew that the heart and kernel of any well regulated home was the nursery, and where was the nursery of medicine to be found if not in Edinburgh? Edinburgh was peopled by the shades of those who had made history in medicine. They had come to the medical school here as to a shrine, but not simply as to a shrine hallowed by noble traditions and memories of the immortal past, but he hoped and believed that they might come to it as to a fountain of living water from which there continued to flow a stream of gathered knowledge and fresh discovery. Their visit, he imagined, was mainly for

the purpose of meeting her teachers face to face and in order to profit by the stimulus that came from contact and from study not only of methods but of men. They in Scotland admired the splendid share taken by the United States in the development of the science of medicine and surgery. They would find all doors open in Edinburgh and would receive a fitting welcome in the inner holies of this Mecca of medicine. Professor James Mackintosh, K.C., Dean of the Faculty of Law, in presenting Dr. Mayo for the honorary degree of LL.D., said that the names of Dr. Charles Mayo and of his brother William were revered throughout the surgical world as those of the joint founders and directors of the famous Mayo Clinic at Rochester, an institution which for some years past had occupied a foremost place as a post-graduate school of surgery. The brothers Mayo, with characteristic generosity and foresight, had benefited and endowed several research scholarships. Mr. Mayo was known all over the world as a leading authority on the pathology and treatment of diseases of the thyroid gland. To his wide knowledge and vast experience he added the sound judgement and wise discretion that gave his opinions exceptional weight with his professional brethren, and when the United States entered the war he and his brother had held alternately the post of Chief Consultant for Surgical Services in the Army Medical Department. The Dean then presented Dr. Mayo for the degree of LL.D., which was conferred by the Vice-Chancellor. Dr. Mayo, in his reply, said that words crowded his mind in a disorderly way due to the emotion of the occasion. Edinburgh University was fortunate in being located in one of the few beautiful cities of the world. He appreciated highly the honour which this institution had now given him in this honorary degree, and he received it in the sense that it was presented to the medical profession of America through the fortunate circumstance that he was there as the representative of the Inter-State Assembly, which not only took in the United States but had members in each province of Canada. He would point out that over 500 doctors from America were now in Edinburgh and that these represented every State in the Union. They would go back taking with them the memory of all the kind and courteous treatment they had received and of the efforts on the part, not only of men of the medical profession and of scientific men, but of the best men in the British Isles, who had looked after them in every way; and they would take with them a kindly feeling for the old country from which they sprung. For the preservation of civilization a closer harmony was necessary, and the two great English-speaking peoples should come closer and closer together as time went on.

After the reception by the Vice-Chancellor and graduation ceremony the American doctors adjourned to the neighbouring Royal Infirmary, where the whole staff took part in a series of clinics, operations, and demonstrations on various departments of surgery, medicine, gynaecology, ear, nose and throat diseases, and eye diseases. After lunch three large meetings were held in the Large Surgical Theatre, East Medical Theatre, and West Medical Theatre, at each of which a series of clinics lasting about fifteen or twenty minutes were delivered on various special subjects. On Thursday evening a reception was held in the grounds of Inverleith House, which had been lent to the Town Council for the purpose by Professor Wright Smith, Regius Keeper of the Royal Botanic Gardens. Lord Provost Sir William L. Sleigh and Lady Sleigh, supported by the magistrates and town councillors, received the guests. The Lord Provost, in a speech of welcome to the gathering, said that the City Fathers were proud of the Edinburgh Medical School and its eminent surgeons and physicians, whose reputation he thought was second to none and whose skill and ability had done much for suffering humanity; they were glad that the Assembly had included Edinburgh in their tour and that they were having a busy time at the clinics and demonstrations organized for them. The reception, which was held in the open air, was fortunately favoured by perfect weather, and the beauties of the Botanic Garden and of the view from it across Edinburgh were greatly appreciated by the American visitors.

On Friday, June 19th, two excellent museums in surgery, pathology, and bacteriology had been organized—one in the pathological department of the Royal Infirmary, and another, which dealt mainly with bacteriology, in the pathological department of the University. A series of medical and surgical clinics in the operating theatres and wards of the Royal Infirmary and of the Sick Children's Hospital similar to those of Thursday, was held in the forenoon of Friday, and in the afternoon two series of short clinics lasting fifteen to twenty minutes each were held in the Large Surgical Theatre and in the West Medical Theatre. The attendance of the visitors at the clinics both on Thursday and Friday was maintained in very nearly full numbers. Subsequent to the afternoon clinics, the party of visitors were conveyed to Holyrood Palace, where they were met by a party of ladies, the wives of the medical teachers. About 300 visitors passed through the palace in groups of about forty, being guided over the State and historical apartments. Tea was served in the grounds behind the palace. The majority of the American doctors left for the South on Saturday morning, *en route* for Paris.

VISIT TO NEWCASTLE-ON-TYNE.

A party of American medical visitors, numbering about eighty, visited Newcastle-on-Tyne on Saturday, June 20th, on their way back from Edinburgh. They were met at the Central Station and conducted in parties to the Cripples' Home at Gosforth, the Princess Mary Maternity Hospital, and the Children's Hospital, where various methods of treatment were demonstrated by members of the staffs of the institutions.

The visitors next attended a reception in the library of the Royal Victoria Infirmary, where they were cordially welcomed by Lord Armstrong, chairman of the house committee, with whom were Sir Thomas Oliver, Dr. Beattie, Dr. A. M. Martin, chairman of the honorary medical and surgical staff, and Dr. R. A. Bolam. In the course of his short address Lord Armstrong spoke of the debt owed by the medical profession to the great post-graduate clinic which their visitors had so successfully established, and with which their leader, Dr. Charles Mayo, was so honourably and so inseparably connected as its president. He then gave some account of the Infirmary and its work. Last year, he said, they treated more patients and performed more operations than any other hospital in England except the London Hospital. On behalf of the medical staff Dr. Martin added a few words of welcome. Immediately after the reception the visitors again separated into parties for the purpose of attending demonstrations in the wards, operating theatres, lecture theatre, and pathological and electrical departments. An exhibition of pathological specimens from the College of Medicine had been arranged for their benefit in the Board Room, and some rare books were on view in the library. The anatomy department and pathological museum of the College of Medicine were also open for inspection, and opportunities were given to visit the War Pensions Hospital adjoining the Royal Infirmary.

At 1 o'clock the visitors were entertained to luncheon at the Grand Assembly Rooms by the Lord Mayor of Newcastle, Alderman Walter Lee, on behalf of the city council. The Lord Mayor, in proposing the toast of "Our Distinguished Guests," said that the people of Newcastle were glad that this ancient city had been included in the visit of the American physicians. Dr. Charles Mayo, in reply, thanked the Lord Mayor and corporation for their hospitality. Referring to Lord Armstrong's generous gift of £100,000 to the Royal Infirmary, he announced amidst loud applause that in recognition of the great work they had done for medicine it was resolved to make Lord Armstrong, Professor Rutherford Morison, Dr. Beattie, Dr. Martin, and Mr. Grey Turner, honorary members of the American Inter-State Post-Graduate Assembly. The health of the Lord Mayor was proposed by Sir Thomas Oliver, who expressed the thanks of all present for the civic hospitality.

After luncheon the visitors were taken by motor coaches to Durham, and visited the cathedral and castle. They were entertained to tea at the Deanery by Bishop Welldon, Dean of Durham, and returned to Newcastle in time to catch a special train for London.

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THE MEDICAL WITNESS.

IT is no exaggeration to say that of the expert evidence in courts of law the larger part is given by members of the medical profession. It therefore behoves all medical men to acquire a sound knowledge as to how best they can prepare themselves for the task. The British Medical Association Lecture recently given by Mr. H. H. Joy, K.C., to the South Staffordshire Division, published this week (p. 1159), supplies much useful practical information and embodies many shrewd pieces of advice. The lack of knowledge of a few simple precepts may easily turn a medical man's appearance in the witness-box into an uncomfortable ordeal. Mr. Joy warns the medical witness against some of the common mistakes he is apt to make, and tells him in plain words, reinforced by homely illustrations, how he can best avoid those traps into which the unwary fall.

Mr. Joy refers—all too briefly, we think—to the question of joint conferences between medical witnesses on both sides before the hearing of a case. In this connexion we may recall that in 1923 the Representative Body of the British Medical Association resolved "that it is desirable that medical men who may be called as witnesses in legal cases (especially under the Workmen's Compensation Act) should consult with each other before the case is heard so that they may if possible agree upon the facts." Upon this resolution the Council of the Association reported that, as this policy had been laid down by the Association as far back as 1905, no further action was necessary beyond a reminder to the Divisions. Mr. Joy favours these joint conferences, but considers they should be held "without prejudice." Some time ago an interesting correspondence on the subject arose in our columns, and the late Sir Clifford Allbutt, in a letter published on December 22nd, 1922, gave an account of the excellent results obtained from the adoption, in his early days in Leeds, of the method of joint conferences, "to avoid the setting up of medical men as fighting-cocks one against another." The method, he said, was bitterly opposed by the lawyers at first, but gradually the best legal firms and the leading counsel approved and applauded it, for the evidence was immensely improved in both quality and consistency, new facts or new interpretations came out, and doctors of less experience were not sorry to accept a more adequate diagnosis or partial modifications. We have not only Sir Clifford Allbutt's word that these excellent results invariably flowed from joint conferences: the late Mr. Justice Stephen, in a case in which Sir Clifford Allbutt was a witness, paid a weighty tribute to the medical testimony given in Leeds—"the only town where he never heard those unseemly disputes between the legal and medical professions which occurred at other places." But, as Mr. Joy points out, even the method of joint conferences is not without danger. For instance, if one doctor should be examined or cross-examined as to what the doctor to be called by the other side said at the joint conference, his answers might involve personal conflicts of recollection. To avoid such unpleasantness there ought to be a distinct stipulation that such joint conferences be held "without prejudice," so that there can be no examination or cross-examination with regard to it of the medical men on either side.

To those who assert that the fact that doctors are willing to go into the witness-box and give diametrically opposed statements of opinion somewhat minimizes the value of such evidence, it may be retorted that even judges differ in their opinions on the law, and that judgements in lower courts are often reversed in the court above. Differences of opinion honestly held there will always be. Because one doctor holds a contrary opinion to that held by another it ought not to be inferred that one of them is not to be believed on his oath. Yet this was the very fallacy that Lord Justice Scrutton exposed in his judgement in the Harnett case, when he characterized the direction of Mr. Justice Lush to the jury, "Which do you believe?" as "unfortunate," adding, "The truth is in these mental cases you may believe both." The real question for the jury was: "Do you believe those witnesses who depose to facts which are strong evidence of instability of mind, and what conclusion do you draw from them?" We think Lord Justice Scrutton's comment applies to almost all cases where medical witnesses are called by both sides.

We believe Mr. Joy's advice to be sound when he recommends medical witnesses to attend the conference always held between counsel and the professional and lay clients before the hearing of a case. It is of cardinal importance that counsel should grasp clearly the bearings of the case in its medical aspects, and the medical witness ought not to leave counsel to mere second-hand knowledge conveyed through possibly inadequate instructions from professional and lay clients. Then, further, the medical witness ready to give evidence as to his opinion upon a fact may be surprised to learn while waiting that this fact is inaccurate; and here again it is obvious that the medical witness should at once apprise his counsel of the effect of the new or altered fact upon the evidence he is about to give.

The use of technical terms is sometimes inevitable, and there are cases in which the judge, counsel, and jury must be educated by the medical witness as to the meaning of an abstruse technicality—and this is especially so where there is a fine issue and there happens to be no simpler word in which a certain condition may be accurately described. Subject to this, we sympathize with Mr. Joy when he says that "scientific evidence should be as unscientific as possible when given in court," and (we take the liberty to add) particularly where such knowledge has to be conveyed to the understanding of the average common jury. Mr. Joy's illustration of the futility of the use of technical language where simple words would suffice is a familiar one to medical men—a medical witness's description in pathological terms of a lesion over the orbit, and the judge's comment, "If you mean a black eye why don't you say so?"

The medical profession has always urged that the privilege of non-disclosure should be accorded to medical witnesses where communications of a professional character are concerned. Mr. Joy dismisses this claim as an impossible one—first, because if it were conceded it would conflict with statute law (the Notification of Diseases Act and the Notification of Births Act); and secondly, because in civil and criminal proceedings the ends of justice would be defeated if doctors were allowed to decline to give

evidence of the facts which had become known to them. Lord Justice Atkin, we are glad to observe, was not quite so dogmatic when he recently said that no doubt the law would so remain until some doctor—"should he say some fanatical doctor?"—preferred prison to violation of the confidence reposed in him by his patient. Lord Justice Atkin suggested that the question might then arise whether the conflicting claims of public health and public justice could not be reconciled by something less than a complete obligation on the part of the doctor to make disclosure when called upon to do so. Mr. Joy holds that an absolute privilege not to disclose cannot be accorded the doctor, but we venture to hope, with Lord Justice Atkin, that a qualified privilege is within the realms of possibility. For we presume him to have meant that upon the hypothesis of a "fanatical doctor" electing to go to prison rather than to disclose, the Legislature or the Bench might extend the privilege, already accorded to confidential communications between solicitor and client, not to all, but to a certain class or classes of communications between doctor and patient. At present the medical witness confines himself to a refusal to disclose such confidence until instructed by the judge to make disclosure.

Perhaps the most vital piece of advice contained in Mr. Joy's lecture is his warning to the medical witness against what he picturesquely terms "unconscious partisanship," which, he says, accounts for much of the differences of opinion expressed by the doctors on either side in a case. Counsel is a partisan. He identifies himself with his client's legal fortunes. He is out to win his case by bringing every scrap of evidence and every subtlety of argument to bear upon the minds of the judge and jury to secure a verdict and judgement from them favourable to his client. That, the Bar holds, is what he is briefed for—what is expected of him by judge and jury alike. But this same partisan attitude, which is the essence of successful advocacy, ought to be strenuously avoided by the medical witness. It is true that the mere fact that he is giving evidence for one side tends to identify the medical witness with the legal fortunes of that side, and it is no doubt extremely difficult to avoid the appearance of partisanship, in a mild form at any rate. But if the medical witness remembers that the judge and jury look to him, as a member of a profession possessing high traditions of honour and of scrupulous fairness, to give them a reasonable and impartial statement which will serve to guide them to a right decision, he will give due weight in whatever he says, not merely to the facts deposed to by the other witnesses on his own side, but also to the facts deposed to by the witnesses on the opposing side. This is the type of medical witness the cross-examiner makes very little, if any, headway against. The medical witness, to use a military phrase, has dug himself well in during his examination-in-chief—has not overstated his case, and has made reasonable allowances to the other side already—and so he is now the better able to resist the onslaughts of the cross-examiner. There are cross-examiners and cross-examiners. The most dangerous type is the counsel who puts a question in a form which makes it impossible of truthful answer Yes or No. Very often the judge leaves the task of objection to counsel on the side by which the witness has been called. But the counsel is not always sufficiently alert to protect the witness from questions couched in ambiguous form. In this event the witness is left to his own resources—a layman unskilled in the field of dialectics pitted against counsel with whom dialectic skill is part of his stock-in-trade. The medical witness would do well to read the Lord Chief Justice's *obiter dicta* on questions put in cross-examination, which will be found in his judgement in Rex *v.* Baldwin (*Times*, March 17th, 1925). In both civil and criminal cases, he said, questions are often asked which are really of the nature of an invitation to an argument—for example, "Is your evidence to be taken as suggesting that . . . ?" The Lord Chief Justice said the prudent witness would answer that he was there not to make suggestions, but to answer relevant questions, and that the conclusions to be drawn from his evidence were for others. As a matter of fact, such a reply it would be almost impossible for any witness to think of making. The Lord Chief Justice himself said that such an answer required a good deal of sense, self-restraint, and experience, but—what is more—it might prejudice the witness in the eyes of the jury. If a medical witness does meet this mischievous type of cross-examination he must above all keep cool, and before answering perhaps an inquiring movement on his part towards the judge may cause help to come from that direction. We say "keep cool," because it is just at the stage when questions are put in a most mischievous form, tending to confuse or aggravate the witness, that tempers become strained. It is well to remember that upon onlookers, as the judge and jury are, exhibitions of lack of self-control have a damaging effect. A witness who loses his temper usually loses his side's case into the bargain. It is, at any rate, a walk-over for counsel so far as that witness is concerned. Counsel's ebullitions—if he is a good advocate—are but simulated for the occasion, and do not involve the slightest loss of self-control.

Mr. Joy's lecture will have served its purpose if it arouses fresh interest and evokes wide discussion of what we consider a much neglected side of the life of the medical man, yet, at the same time, a side which is growing in importance daily — preparation for appearance as a medical witness.

MEDICAL RECIPROCITY WITH ITALY.

Now that a fresh agreement has been signed with Italy, under the terms of which medical practitioners possessing degrees from the Royal Italian Universities may register in the Foreign List of the *Medical Register* of the United Kingdom, thereby obtaining full privileges of practice in Great Britain and Ireland, and British practitioners may obtain full freedom to practise in Italy, it may be interesting to record the history of this arrangement.

In 1892 the Privy Council forwarded a communication enclosing a copy of a "projet de loi" in regard to medical practice in France, together with a report in which it was recommended to the French Senate that after an interval of a year from the passing of the Act no person should be entitled to practise medicine in France except those who held the Government diploma of M.D. The General Medical Council thereupon drew up a statement of the terms on which foreign medical men were admitted to practise in this country, and this was forwarded to the proper Ministerial authority in each of the principal foreign countries in Europe, in order that they might have the conditions before them.

A reply was received from Italy that under the law then in force foreign doctors and surgeons might exercise their profession in Italy provided they were

furnished with a professional qualification (*abilitazione*) granted by one of the Royal Universities; and it was added that foreign doctors and surgeons could practise, without complying with this condition, when they were summoned from outside the kingdom to attend special cases.

Nothing further was heard of the matter until in 1897 the General Medical Council was informed by a private correspondent that a law was about to be introduced into the Italian Parliament which was of vital importance to all British medical men actually resident and practising in Italy, particularly if the law should be made retrospective, because they would no longer be able to carry on their practice in that country. The Council thereupon communicated with the Privy Council, and was informed that there was no intention at that time on the part of the Italian Government to modify the existing laws. Shortly afterwards, however, it appeared that Italy was contemplating a change in the law which would adversely affect British practitioners. In 1899 the Italian Ambassador asked if Italian physicians in England could practise "in the foreign colonies" of this country; and, if they could not, whether the Government would grant special permission to Italian practitioners if similar facilities were granted to English practitioners living in Italy. The matter was referred to the Council's legal advisers, who gave an opinion that the only alternative to refusing permission to practise, excepting under Section 6 of the Medical Act, 1859, which allowed a foreign practitioner legally qualified in his own country to act as resident medical officer in a hospital exclusively for foreigners, was to extend Part II of the Medical Act, 1886, to the country concerned, which would give full privileges of practice to all those who complied with the conditions laid down.

Further correspondence took place, with the result that in 1901 Part II of the Medical Act, 1886, was extended to Italy, and Italian practitioners were thereby given full freedom of practice in the United Kingdom. Italy, however, did not adopt full reciprocity, and British practitioners were entitled only to practise in that country amongst their own countrymen. It was thought advisable to accept this one-sided arrangement, which was strongly advocated by British practitioners in Italy at that time, because otherwise the British practitioners already in Italy would have lost their practices, and no others would have been able to enter that country.

In 1910 a new law was passed in Italy, under which foreign practitioners whose own countries granted reciprocity of practice to Italy were favourably affected, since, instead of the limited right of practising only among foreigners, they thenceforth enjoyed unrestricted freedom of practice. It was stated that, as matters then stood, this concession benefited British practitioners only, Great Britain being the only country that granted reciprocity to Italy.

This satisfactory condition of affairs continued until 1923, when the General Medical Council was supplied with a copy of the Royal Italian Decree of March 25th, 1923, which was to the following effect: "Italian subjects and foreigners who have duly obtained a professional diploma in an institute of a foreign State can also be inscribed, when such State has *come to a special agreement* with the Italian Government on the basis of absolute reciprocity of treatment for Italian subjects holding Italian diplomas." This correspondence came through the Ministry of Health, which was informed that, as complete reciprocity in regard to medical practice was established with Italy in March, 1901, and confirmed by Italian legislation in June, 1910, it did not appear that the new regulations affected Great Britain. A copy of the correspondence was forwarded to the Privy Council for its information.

The General Medical Council was informed at this time that a practitioner whose name was on the *Medical Register* had been refused leave to practise in Italy, and the Privy Council was thereupon asked that His Majesty's Ambassador at Rome might be requested to make urgent representations on his behalf. Further correspondence ensued, and the British Ambassador wrote in December, 1923, that the "special agreement" between the two Governments had been rescinded by the recent decree, in so far as fresh applications from British doctors to practise in Italy were concerned, and that it would be necessary to come to a fresh "special agreement" before reciprocity was again on a satisfactory basis. The practitioner in question, having been informed by the Italian Consul that he would be able to practise in Italy, and having thus been placed in a serious position, was as a special case allowed to register in Italy, but the main question still remained unsettled.

Much correspondence on both sides followed during 1924, and for a long time it was impossible to get the Italian authorities to take any definite action. It was not until December 30th last that the Privy Council was able to transmit a draft of an agreement between Italy and Great Britain to regulate the matter. This draft required some amendment in regard to technicalities, but it was promptly returned by the General Medical Council to the Privy Council. At the end of January, 1925, the Italian authorities suggested certain further amendments, which were immediately accepted; but, notwithstanding the efforts of the General Medical Council, the Privy Council, and the British Ambassador, it was not until May 21st, 1925, that the agreement was finally signed. Thus for some two years, although Italian doctors were freely allowed to register in this country, British practitioners were not granted similar privileges in Italy. Even now the Italian authorities do not seem to have settled what their requirements will be, and the Italian Consul states that it appears that the agreement cannot come into force until it is duly ratified or approved by the Italian Parliament. He does not seem to be in a position to give definite information, but every effort is being made, with the cordial assistance of the Privy Council, to have the difficulties cleared up at the earliest possible moment. All those who desire information should write to the Royal Italian Consul, 144, Queen Victoria Street, London, E.C.4, asking to be informed of the requirements as soon as they are finally laid down. Under the old arrangement an applicant had to produce: (1) his diploma at the town hall of the city in Italy in which he desired to practise; (2) a certificate of medical registration in Great Britain up to date; (3) his birth certificate; (4) a certificate of immunity from any charge, offence, or conviction (which could be obtained from the chief constable or town clerk of the place in which he resided); (5) a certificate attesting that he is in full possession of all rights pertaining to a citizen or member of society (which also could be issued by the town clerk). The diploma and certificates had to be produced at the Consulate for legalization and translation into Italian, and the fee charged was about £12 5s. It is probable that somewhat similar conditions will be laid down for the future.

INCOME TAX ALLOWANCE FOR DEPRECIATION.

THE Chancellor of the Exchequer has agreed to the insertion in the Finance Bill for this year of a clause put forward by Dr. F. E. Fremantle which is of some importance to medical practitioners. The effect of the clause will be to remove the distinction that has hitherto obtained between traders and professional men with regard to an allowance year by year for the depreciation of plant and machinery used in the earning of their income. Traders have been entitled to such an allowance, but the use of "plant and machinery" by professional men is comparatively recent, and the distinction referred to was evidently the accidental result of the circumstances obtaining when the Income Tax Code was enacted. Arguments in favour of its abolition were put before the Royal Commission on the Income Tax by witnesses representing the British Medical Association, and that Commission reported in favour of the change now to be effected. It may be convenient to indicate here the nature and results of this change.

It is obvious that during his professional career a medical practitioner must normally incur considerable expense in maintaining his motor car equipment. Running expenses—such as the cost of petrol, tyres, oil, and the like—recur frequently, and the proper mode of dealing with them in calculating professional profits is clearly to regard them as expenses chargeable to the year in which they were in fact incurred. But besides running costs, there is the comparatively rare and heavy expense of substituting a new car for one which has become unsuitable for professional use. An accountant, in preparing accounts for a business in which a car—for example, a delivery van—is used, would very properly regard it as necessary to set aside some portion of the profits each year to provide against the expense of replacing the car at some future date. Actually the sum estimated according to the probable life of the car might not be taken out of the business, but the appropriate amount would be charged against the year's profits, so that the correct net balance only would appear as the true amount of the profits made. Substantially—minor differences will be explained later—this principle is accepted by the Income Tax Acts as applied to commercial profits, but hitherto professional profits have been dealt with differently; no anticipatory depreciation allowance has been given, but in lieu of that the professional man has been entitled to treat as an expense of his practice the actual net cost of replacing his car with one of similar grade. This method is open to two main objections: first, that the allowance is not received soon enough, and secondly, that it is insufficient in amount. So far as the question of time is concerned, the expense is originally incurred when the first car is bought, whereas no allowance is received until that car is disposed of and a second one bought to replace it. Even then, the three years' average adds a further period of postponement to the allowance. For instance, suppose the first car to have been purchased in 1920 and the second in 1926, no allowance at all would be received until tax became payable in January, 1928, and then the tax would be affected only by one-third of the sum charged against the 1926 profits owing to the fact that the 1927-28 assessment would be based on the profits of the three years to December 31st, 1926; not until 1930 would the benefit of the full allowance have been received. Secondly, the allowance was insufficient, partly because the practitioner's retirement or death would normally leave him in the position of having a car on which depreciation had accrued but for which he had received no allowance, and partly because, with falling motor prices, the renewal cost becomes less than the original outlay, and some inspectors of taxes were apparently taking the strict technical view that in such circumstances the allowance must be based on the smaller value.

It may be convenient before leaving this question to refer to one or two practical considerations. It is clearly a matter of some difficulty to estimate with approximate accuracy the probable life of a motor car, and therefrom to deduce the appropriate annual deduction to be made. The difficulty is, we understand, met as a rule by taking an estimated rate (which is frequently 15 per cent. on the value as written down year by year), and when the car is eventually replaced giving, in addition to the previous deductions for obsolescence, a further allowance in the form of a professional expense equal to the excess of the total net actual cost of replacement over the depreciation deductions. Depreciation allowances are not regarded as expenses—that is, they are not deducted in calculating the profits of the separate years falling into the average period taken for the purpose of the assessment; those profits are calculated apart from any question of depreciation and the amounts of the allowance deducted from the average profits so calculated.

It would be premature at this stage to pursue this subject in greater detail; sufficient may have been said to show that the thanks of the profession are due to Dr. Fremantle for his assistance in securing an amendment of the income tax law which was certainly due in equity, and which should prove of real value to a class of taxpayers who deserve every consideration at the hands of the Exchequer.

PROPOSED MEDICO-LEGAL INSTITUTE.

THE Medico-Legal Society (as mentioned in our issue of June 6th, p. 1039) proposes to establish a medico-legal institute, but, fully recognizing the many difficulties—financial, statutory, and otherwise—which stand in the way, the meeting which discussed the project at the Royal Society of Medicine on Tuesday, June 23rd, merely expressed a general approval of the idea and requested the committee which has the matter in hand to develop the proposal in co-operation with all interested parties. The objects of the proposed medico-legal institute were fully set forth by the president of the society (Lord Justice Atkin) and by Sir Bernard Spilsbury, the joint secretary. It is proposed that the new institute shall control the teaching and training of post-graduates, and so raise a body of specialists who will be available for posts such as those of coroners and police surgeons, and to effect this purpose the co-operation of the Board of Education, the University of London, and the Royal Colleges of Physicians and Surgeons is sought. A medico-legal museum is to be formed wherein will be housed pathological specimens which will afford special facilities for research. As Mr. Ingleby Oddie, the Westminster coroner, said, there is at the present time an enormous waste of pathological material in London alone. London, although the largest city in the world, will not be the first great metropolis to have established a medico-legal institute if the scheme succeeds. Paris has had such an institution these many years, whilst Vienna, Berlin, and Chicago are similarly fortunate. It is proposed to have a staff of medico-legal experts: a director of investigations, the holder of a chair of medical jurisprudence, a toxicologist, and a bacteriologist. Obviously, as Mr. L. W. J. Costello pointed out, the question resolves itself into one of finance. Sir Bernard Spilsbury said that

if such an institute came into existence the Government and such departments as the Home Office and the Ministry of Health would be closely concerned in seeing that it was satisfactorily developed. Also, assistance is hoped for from the public municipal bodies such as the London County Council, with its interests in the coronerships, and from the great examining and teaching bodies such as the University of London and the medical schools of the hospitals. Sir William Willcox, Sir William Collins, and Sir Walter Fletcher all spoke in terms of approval of the scheme, and the president urged that while to get it into proper working order would need considerable financial assistance, yet to begin in a small way was quite within the realm of present possibilities. If they had a great teacher, he said, even though he had only a shed to lecture in, they were bound to have a successful school: they must make a start. It is clear that if the Medico-Legal Society is willing to start a medico-legal institute in this way, so creating the need for housing lecturers and students and specimens before running into expenditure on building and charges of upkeep, the project may confidently be expected to succeed. Under the aegis of a president who is also the chairman of the Council for Legal Education, and a joint secretary who is eminent as the Home Office honorary pathologist, it is obvious that teachers of the highest standing will be available. All the other problems, financial and constitutional, will, we feel sure, under such favourable auspices resolve themselves as they arise.

TREATMENT OF ELECTRICAL ACCIDENTS.

CONSIDERING the extensive use of electricity and the serious nature of the accidents to which it may give rise, it seems desirable that both the laity and the medical profesion should have a better knowledge of the subject; at present it appears to be lamentably defective. To remedy this Professor Jellinek has written a small book on electrical accidents.[1] As an indication of the seriousness of the situation he mentions that within the first nine months of 1924 nine fatal accidents occurred in Vienna alone. These were all low-tension accidents—seven of them due to defective lamps, two to faulty installation. All could have been prevented, given a little understanding of the problems involved; all the injured could have been saved if proper medical treatment had been instantly applied. Of the four modes of death from electrical shock described by the author, the commonest are sudden death and delayed death; in the latter the collapse and loss of consciousness are delayed for a few seconds or minutes, during which the patient attempts to extricate himself and calls for help. In both cases, however, it seems that death is for a time merely "apparent," and it is important for every medical man to realize that the so-called primary signs of death (absence of consciousness, pulse, and respiration) are in themselves insufficient, and that it should not be concluded from them alone that a man is dead; the doctor should not rest satisfied that death has occurred until there is hypostatic discoloration of the body. This may not appear for one, two, or more hours, and artificial respiration should be continued up to that time. Another point of importance is that the artificial respiration should be applied instantly and should be continuous; a few minutes, even seconds, may make all the difference in the result, and if artificial respiration is being employed on the arrival of the medical man he should not interrupt it to make inquiries as to the nature of the case. A third point is that the method should be applied *secundum artem*; both the laity and the profession are, according to the author, defective in this matter owing to lack of proper instruction. It may be observed that artificial respiration is not mentioned in the textbooks among the causes of multiple fracture of the ribs, but many pathologists, from their *post-mortem* experience, would be inclined to include it in the etiology. In any case the author is right in suggesting that intelligent efficiency rather than force should be the guiding principle. In discussing the arrangements made in factories and other institutions for dealing with electrical accidents, Jellinek dwells on the futility of hanging on the walls of the building plentiful directions as to how workmen should act in cases of emergency. He gives examples of the mental vacuity usually displayed under this system. In one instance a man accidentally received an interrupted current of 220 volts, and shouted for help; all the other persons present hurried from the room. Several other similar cases are mentioned. Again, an electrician was inserting an arc lamp on a bridge when he became electrified with a current of 220 volts and was unable to free himself. The man detailed to look after the electrician's safety, instead of endeavouring to release him, ran to the nearest telephone, according to "instructions," in order to inform the Life-saving Society of the occurrence; meanwhile the electrician died. The author points out that nothing is of any use short of actual practice in the measures to be adopted in cases of emergency, as is now generally done in case of fire. The essentials are, in the first place, to extricate the man from the current, and secondly, to treat the apparent death instantly and continuously with artificial respiration. To do these things promptly and efficiently requires previous actual practice. Other practical matters are dealt with in this good and useful essay, including the danger points in electrical installations, the action of electricity on the organism, the interesting problem of the influence of personality as a defence against the action of the electric current, and the pathology of the subject.

[1] *Der Elektrische Unfall.* Von Prof. Dr. med. Stefan Jellinek. Leipzig and Vienna: F. Deuticke. 1925. (6¼ × 9½, pp. iv + 142; 25 figures. G.M. 4.80.)

TRANSMISSION OF DENGUE.

SINCE the original work of Graham in 1903, of Bancroft in 1905, and of Ashburn and Craig in 1907, there has been some doubt as to the part played in the transmission of dengue by the mosquitos *Culex fatigans* and *Stegomyia fasciata* respectively. We pointed out on March 10th, 1917 (p. 339), when referring to the investigations of Cleland, Bradley, and McDonald in Queensland and New South Wales during 1916, that further experiments were necessary to prove whether *Culex fatigans* could propagate dengue. We added that the mosquitos should be bred from larvae and allowed to bite persons under control conditions. Experiments on these lines have now been organized by the Medical Department Research Board of the United States Army and other closely associated workers, and Lieut.-Colonel J. F. Siler, Major M. W. Hall, and Major A. P. Hitchens have published a summary[1] of experimental work at Manila conducted with a view to confirming or disproving the transmission of dengue by the two mosquitos mentioned; the time after the appearance of the initial symptoms during which the dengue patient continues to be infective to mosquitos; the length of time infected mosquitos are capable of transmitting dengue; and the incubation period of dengue in the human subject. All mosquitos used in the experimental work were bred from eggs, and every precaution was taken to prevent the infection from extraneous sources of the forty-two men who volunteered for the experiment. The hospital ward was carefully screened so that no mosquitos could enter. Of the forty-two volunteers subjected to biting experiments dengue was produced in twenty-five instances (60 per cent.), and the positive results obtained by Cleland, Bradley, and McDonald with regard to the transmission by *Stegomyia fasciata* were

[1] *Journal of the American Medical Association*, April 18th, 1925 (p. 1163). A full report will be issued in the *Philippine Journal of Science*.

fully confirmed. The experimental evidence pointed to the conclusion that a patient with dengue fever was capable of infecting these mosquitos during, at any rate, the first three days of the disease. It appeared that the virus causing dengue fever must remain in the mosquitos for a period of approximately eleven days before the insect became capable of transmitting the disease to non-immune human beings. These mosquitos continued to be infective for a very long period, probably through the remainder of their lives. Five volunteers were submitted to the bites of *Culex fatigans* in which the dengue virus had been allowed to remain for a sufficient length of time to produce infection, but the results were entirely negative; these five volunteers were infected at once when *Stegomyia fasciata* was used. Attempts were made to reinfect twelve patients who had recovered from an attack of dengue which had begun between forty-one and one hundred and twenty-one days previously, by the injection into them of blood from patients in the early stages of the disease. It was found that 58 per cent. of these were immune, and those who did develop the typical attack of the disease were ill for an average of 2.8 days, as compared with the 4.8 days of the primary attack. These results appear to indicate that dengue is followed by a definite degree of immunity, but the refractory state does not compare with that of scarlet fever. The authors point out that the striking similarity between the mechanism by which both dengue and yellow fever are transmitted gives ground for the suggestion that the organisms causing the two diseases may fall into the same group. It is possible to find some clinical resemblances between mild attacks of yellow fever and typical attacks of dengue. The authors conclude that both diseases are caused by filterable viruses present in the peripheral blood of the patient, and that both may be produced by the injection into a susceptible individual of blood from an infected person or of a filtrate of it. Both are transmitted by the bites of the *Stegomyia fasciata* mosquito only, and the mechanism of transmission is practically identical in the two. The patient becomes infective to the mosquito during the first three days of the disease; the mosquito becomes infective about eleven days after the virus has been introduced into it, and (as has been said above) continues infective probably for the remainder of its life. The hope is expressed that further research in dengue may suggest other methods of approach to the unsolved problems relating to the epidemiology and control of yellow fever.

RADIUM TREATMENT OF MENORRHAGIA.

DR. R. T. LEWIS, in his annual report for 1924 on radium treatment at University College Hospital, gives it as his opinion that the results as gauged during three and a half years' experience in cancer of the cervix are "somewhat gloomy"; though great amelioration of distressing symptoms undoubtedly follows radiation, the progressive course of the cancer cannot be arrested. Similarly, in cancer of the body of the uterus and the vagina and vulva, radium has brought little prospect of cure. On the other hand, in conditions of menorrhagia the sphere of usefulness of radium therapy appears to be continually enlarging and its value more firmly established. Thus, of 32 cases of haemorrhage at the menopause whose early history was given in last year's report, Dr. Lewis finds 27 to be in good health without any recurrence of bleeding. In the menorrhagia of young women who present no sign of pelvic disease—the so-called essential menorrhagia—the records of the three and a half years amply demonstrate that radium is "of incalculable value in the treatment of intractable haemorrhage," and Dr. Lewis announces that this method of treatment is now employed as a routine procedure at University College Hospital. In menorrhagia due to fibroids radium therapy is, in suitable cases, attended with good results. In general it may be said that fibroid tumours of a size greater than that of the pregnant uterus at five and a half months call for surgical treatment; radium therapy is most trustworthy when dealing with the smaller tumours. Thirteen cases of fibroids were treated by radiation during the year, and in eight of these amenorrhoea followed. Only two cases required a second treatment. Altogether in the last three years 36 cases of fibroids have been treated by radiation, and in 22 of these the menorrhagia has been completely cured. In 9 cases a second treatment has been given, and 3 more will probably require it. In 2 cases it was considered advisable to remove the uterus, though further radiation treatment might have been successful. The report gives a detailed history of all cases treated with radium in the twelve months ending October 31st, 1924.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE eighty-fourth annual meeting of the Medico-Psychological Association of Great Britain and Ireland will be held at the University Buildings, Edmund Street, Birmingham, from July 6th to 10th. The newly elected president, Sir Frederick W. Mott, F.R.S., will be in the chair. Reports will be received from various committees, and it will be proposed that Sir John McPherson, C.B., M.D., Professor of Psychiatry in the University of Sydney, shall be invited to deliver the Maudsley Lecture for 1926. On the afternoon of Tuesday, July 7th, Sir Frederick Mott will deliver his presidential address, and in the evening the Council and Senate of the University will hold a reception. The annual dinner of the association will be held on Wednesday evening. On Tuesday morning Dr. David Orr will give a lantern demonstration on the sympathetic endocrine system. On the morning of Wednesday, July 8th, Dr. G. A. Auden of Birmingham will read a paper on encephalitis lethargica and its psychological implications, and Sir Frederick Mott will give a lantern demonstration of the lesions of the disease. On Thursday morning papers will be read by Dr. Graves on the incidence of chronic sepsis in mental disease, and by Dr. Pickworth on the iodine content of thyroid glands. In the afternoon a visit will be paid to Hollymoor and Rubery Hill. On Friday a paper on the institutional treatment of mental deficiency, with special reference to occupational training, will be read by Dr. A. M. McCutcheon; this will be followed by a paper on delinquency by Dr. W. A. Potts, and by another on the psychopathic personality by Dr. Hamblin Smith. In the afternoon visits will be paid to Worcester, Warwick, and Stratford-on-Avon.

DR. EDWARD HINDLE, Milner Research Fellow of the London School of Tropical Medicine and Hygiene, has been granted leave of absence for two years to undertake, in conjunction with Major W. S. Patton, an investigation on the transmission of kala-azar in North China, on behalf of the Royal Society. During the past six months Dr. Hindle has been working on the biology and life-history of spirochaetes, and has also devoted attention to the prevalence of leptospira in the neighbourhood of London. He has been successful in finding these organisms, not only in Thames water, but in tap water and many other sources. He sailed for China on June 22nd, and on his way east will call at Calcutta to see the work of the Indian Kala-azar Commission. While in China the Kala-azar Commission of the Royal Society will have a central laboratory at the Shantung Christian University, Tsinan, where Dr. Hindle expects to arrive about the end of August.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

IT will be remembered that at the end of February, 1922, the Rockefeller Foundation offered to provide a sum of two million dollars towards the cost of building and equipping a School of Hygiene in London, subject to the condition that the British Government would make itself responsible for the staffing and maintenance of the school when established. The gift and its terms were gratefully accepted, and the Government, through the Minister of Health, undertook to provide funds adequate for the proper maintenance of the school. A small committee was set up to advise the Minister on the preliminary steps to be taken, and on its advice a site was procured in Gower Street, Bloomsbury, sketch plans were prepared, and provisional plans and courses of study drawn up. In May, 1923, the Minister of Health, with the concurrence of the Rockefeller Foundation, appointed a transitional executive committee, whose duties were to appoint a director, to arrange for amalgamation or co-ordination between the school and other institutions, and to prepare plans for the new school. This committee arranged that the existing London School of Tropical Medicine should become an integral part of the School of Hygiene, and provision was made for this in the school's new charter. In November, 1923, Dr. Andrew Balfour was appointed as the first head of the new institution, with the title of Director of the London School of Hygiene and Tropical Medicine. Until the school is completed the Rockefeller Trustees promised to make an annual grant of £4,000 towards salaries and other administrative expenses. Further than this, they have recently generously undertaken that the capital sum to be provided for building and equipment should be the value in sterling at February, 1922, of two million dollars—a sum of about £460,000—instead of the diminished amount which would be payable at the rate of exchange now obtaining.

The Tropical Division.

Under the terms of amalgamation the old London School of Tropical Medicine has become the Tropical Division of the London School of Hygiene and Tropical Medicine. It retains its status as a school of the University of London, and gives instruction in all branches of tropical medicine and hygiene, and in parasitology as applicable to public health work in this country. For the present it continues to occupy the premises in Endsleigh Gardens, where the work has been carried on for several years past. Previously the school was situated at the Albert Docks, where, under the guidance of Sir Patrick Manson, it rapidly developed. Altogether no fewer than 3,000 students have attended its courses of study.

In due course the transitional executive committee relinquished its duties to a board of management, some members of which were appointed direct by the Minister of Health, while some were representative of a large court of governors which has been established, and to which the board will report annually on the work and progress of the institution.

Provisional Scheme of Work.

As explained by Dr. Balfour in an article contributed to the Educational Number of the BRITISH MEDICAL JOURNAL last year,[1] the provisional scheme of lectures and practical work has been framed on broad lines and with due regard to the new regulations for the D.P.H. laid down by the General Medical Council in 1922. The scheme divides the work into six main departments as follows: (1) Applied physics, physiology, and principles of hygiene; (2) chemistry and biochemistry; (3) immunology and bacteriology; (4) medical zoology, parasitology, and comparative pathology; (5) epidemiology and statistics; (6) the principles and practice of preventive medicine, general sanitation, and administration. In each of these divisions instruction will be given at the school, with museum demonstrations and practical laboratory work, together with lectures and demonstrations at associated institutions. In addition the teaching of tropical medicine will be continued and developed.

As regards the building of the new school on the Gower Street site, five selected architects have submitted plans, according to the specification provided, and from these the choice of a design is now being made.

Revised Curriculum of the Tropical Division.

In the meanwhile the work of the Tropical Division of the School has continued in the existing house in Endsleigh Gardens, and developments are in progress along various lines. The curriculum has been extended; for the old twelve weeks' course one of twenty weeks is now substituted. In recasting the plan of study tropical hygiene has received particular attention; 31½ hours, as compared with 8, will henceforward be devoted to this subject. A short series of lectures on biochemistry, in its relation to diseases and hygiene of the tropics, has been included, and opportunities for clinical study will be increased. The revised schedule provides also for the institution of tutorial or seminar weeks, in which no systematic teaching is given, but instead there will be conferences between teachers and students, with museum demonstrations and clinical work. A powerful stimulus has been given to research by the establishment of a field station in Southern Rhodesia, the appointment of Dr. H. H. Scott as comparative pathologist to the Zoological Society, and the acquisition of a field station near St. Albans, financed by the Ministry of Agriculture, under the immediate direction of Professor Leiper. Further steps are being taken to give opportunities for research work by the creation of four new research studentships at the school, each of the annual value of £250; since there is now a large demand for tropical zoologists and entomologists, this may help to provide the right type of man for such posts. Plans for the future include the building up of a graphic museum of hygiene. The existing museum of tropical medicine will also be expanded on graphic lines, and with these ends in view it is intended to collect material in advance.

Further details are to be found in the prospectus and calendar of the Tropical Division, copies of which can be had on application to the secretary of the school, Mr. R. W. Harris, 23, Endsleigh Gardens, Euston Road, N.W.1. The winter term will begin on October 5th next, and the spring term on March 15th, 1926.

[1] New Conceptions in the Teaching of Public Health, by Andrew Balfour, C.B., C.M.G., M.D., BRITISH MEDICAL JOURNAL, September 6th, 1924, p. 383.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

A SITTING of the Commission took place on June 19th, Mr. H. P. MACMILLAN, K.C., presiding.

Visitations by Guardians.

Mr. GEORGE HILL and Mrs. GLANVILLE, two members of the Wandsworth Board of Guardians, gave evidence on the subject of visitation. They considered that for visitation to be of any real value it should be informal and unnotified. The method of visitation carried out until a year or two ago, when the patients on visiting days were brought up and passed before the visiting guardians, was quite useless. Mr. Hill thought that the present system of visitation, without prior notification, was an efficient safeguard against ill treatment or other irregularity. He complained of the lack of classification according to mental condition of the patients which he found in the institutions he visited, in particular of puerperal patients being placed in insane wards. Mrs. Glanville said that within a three-mile radius of Epsom there were four large mental hospitals, and she thought that the very acute cases might all be in one building, while the other three buildings could be set apart for cases in various stages of recovery, the last of the three being the institution from which they were discharged. This would mean economy in working.

On the question of punishment, Mr. Hill said that he was satisfied that punishment went on in these institutions. He referred to one or two specific cases of ill treatment by attendants. He had known a man to be put into the acute ward by way of punishment; it was well known that there the other patients, who fought amongst themselves, would inflict punishment upon him. At the time when he came in touch with this case the man had been in the acute ward for three

or four days, and the reason given for putting him there was that he had tried to escape. He also complained of the padded room at Cane Hill Mental Hospital; it was dark and ill ventilated, but he admitted that his visit was paid rather late on a winter afternoon, also that it was necessary in such a room to have windows out of the patients' reach. At Hanwell the clothing of the male patients was not adequate in winter. Mrs. Glanville said that the clothing at other mental institutions was better than at Hanwell, but she did not know the reason for the difference. It was much to be preferred that patients should be allowed to wear their own clothing if suitable; any approach to a uniform was felt by sensitive patients.

St. Luke's Mental Clinic.

Dr. R. W. GILMOUR gave evidence with regard to the working of the St. Luke's Mental Clinic attached to Middlesex Hospital. St. Luke's was one of the oldest of the registered hospitals. For many years it received only certified cases of insanity. In 1923 a clinic was established at Middlesex, with six beds, the nursing staff being supplied by St. Luke's. One of the reasons for founding the clinic in association with a general hospital was that people would be more likely to attend, whereas the name of a mental hospital might deter them. Further, the fact that it was a general hospital to which they went helped them to realize that they were ill, and thus to some extent assisted treatment. In most illnesses expert examinations were necessary, and this was also the case at the clinic. The hospital neurologist and the witness saw the cases in the same room, and there was close association between the ward for mental cases and the other wards of the hospital. By such treatment many cases were prevented from reaching the stage of certification. Patients came of their own desire, they were told that they must obey the hospital rules, and if they seemed likely to give trouble he told them that he was taking their word, which was mostly effectual. Noisy patients likely to disturb others were not retained.

In reply to Sir David Drummond, the witness said that he thought a more general extension of this system would be a very good thing. A clinic purely for out-patients would be beneficial also. The cases he received were chiefly those of neuroses and psychoneuroses, but, contrary to the opinions of some, he was convinced that some of these cases passed into genuine psychoses. Several cases, though not certifiable when they came in, became so later. Certified patients were not received in the ward; that was essential to the character of the ward, for the patients were told that so long as they remained there they would not be certified, nor would they be associated with certified patients. The in-patients last year numbered 5 men and 20 women; 4 of the men and 14 of the women recovered. Of the remainder, 3 were removed by friends at the witness's request, and the others were discharged either relieved or not improved. There was no system of letting out on trial, as in mental hospitals, so that he had no knowledge as to how the patients got on afterwards. Not one of these patients passed from him straight to a mental hospital. Occasionally cases which had developed mental trouble in the general wards of the hospital were received into this ward. The nursing staff consisted of five female nurses, all with mental nursing qualification, and one or two with general hospital experience also.

The Voluntary Clinic.

At a further sitting of the Royal Commission on June 22nd evidence was tendered by Lady CHICHESTER, the president, and Dr. HELEN BOYLE, senior physician, of Chichester House, Hove, Sussex.

Lady Chichester stated that this hospital was instituted in 1905 as a voluntary hospital for dealing with early nervous and border-line cases in women and children. It had 29 beds and an out-patient department. The average period of residence of an in-patient was three months, and the average cost of an in-patient per week was £1 19s. 7d. The moderateness of this amount was due to the fact that only a small staff was employed, the patients being able to co-operate in the working of the hospital to a considerable extent. No cases at all were taken on discharge from a mental hospital; such cases were left to the After-care Association, but after-care principles were followed to this extent that a person who had been a resident at Chichester House was encouraged at any time to come back to the out-patient department for further advice.

Dr. Boyle said that it was extremely desirable that such a clinic should be in association with a general hospital, and when Chichester House was started it offered itself to the Royal Sussex County Hospital, but the idea at that time was not entertained. It was equally important that such a clinic should have no association with a mental hospital. She spoke from a considerable experience of American and European clinics. The drawback of many of the clinics she had seen abroad was that they took cases which were too bad for a clinic to take. Professor Winkler's famous clinic at Utrecht was really a great clearing house. That and other clinics of the kind had locked doors, which neutralized the chief advantage of early treatment. Asked which country dealt best with this problem, she said that no country had a monopoly, but the boarding-out system was best in Belgium.

Sir David Drummond remarked that most hospitals in this country admitted the kind of cases treated at Chichester House. Dr. Boyle, however, did not think that general hospital treatment was altogether satisfactory, and this seemed to be proved by the fact that the staffs of general hospitals sent cases to her own institution. Asked what was done when in her clinic a case suddenly developed acute mental symptoms, she said that the relatives were immediately communicated with, and the patient was sent home, if necessary in the company of two nurses. Acute mental cases should not go to such clinics at all; they should go to the mental hospital. She did not want acute recoverable cases to be removed from the domain of mental hospitals, otherwise those institutions would become homes of despair. On the other hand, the clinics, if they did not receive acute cases, would commend themselves better to the general hospitals with which it was very desirable that they should be associated.

Sir Humphry Rolleston noted that a certain number of early cases of disseminated sclerosis were admitted to Chichester House; did not that institution have its hands full with the psychoneuroses? Dr. Boyle defended the right to admit into such an institution all nerve cases, even if there were no signs of functional disturbance. She wanted to maintain the conception that the nervous system should be treated as a whole. Her institution had access to the laboratory of the Sussex County Hospital, so that pathological detail could be investigated there as well as anywhere else.

Nursing Homes.

Dr. Boyle went on to give, at the request of the Commission, certain opinions of her own with regard to certification and cognate matters. She thought that a doctor should be free to treat a willing patient whenever he thought it desirable or possible, and that the patient should be free to go where he wished to be treated or where the doctor wished to send him—in other words, she would allow an unlimited number of licensed or private houses. Instead of the present monopoly in private houses, she would have free competition. With free competition it was very unlikely that there would be serious abuse. The good houses would survive and the bad houses disappear. Public opinion, the friends of the patient, the nurses and servants employed in the institution, all combined to form a better safeguard against abuses than any system of legal supervision could possibly do. The only bad nursing home she had ever known was one which was under supervision, and the fact of supervision lulled the public into a false sense of security with regard to its management.

Dr. Boyle also expressed the view that from time to time certified patients in asylums should be changed from one institution to another. This would cause many chronic patients to give less trouble; the prejudices which they might feel against particular attendants would no longer operate. Indeed, to stay too long at one place encouraged the chronic condition.

Maudsley Hospital.

Dr. EDWARD MAPOTHER, Medical Superintendent of Maudsley, also gave evidence. The Chairman of the Commission (Mr. H. P. Macmillan, K.C.) mentioned that, a few days previously, the members of the Commission had had the advantage of paying a visit to Maudsley, and of inspecting the different departments employed in discharging the three functions of the hospital—research, teaching, and voluntary treatment.

Dr. Mapother said that he desired to give evidence, not as an officer of the London County Council, but as an individual with a good deal of experience of asylum administration, and to urge certain general lines of reform of the existing system. In the first place, he held that there should be more adaptation of the legal formalities to the patient's attitude towards treatment. At present, for the poor, certification was almost everywhere an absolute preface to treatment, whereas his ambition would be to make treatment a means of avoiding certification. In the second place—a thing upon which he laid the chief stress—he wanted to see the provision or approval of specialized types of institution which would deal separately with recoverable and with chronic cases, and separately also, in each of these classes, with patients, on the one hand, who were objecting or objectionable, and, on the other, with patients who were, in the widest meaning of the word, quiet. His third principal point was to urge the extension of the present provision for teaching and research.

The classification of patients in respect to the degree of volition which they possessed was very important. Among certifiable patients there were, first of all, those who were able to co-operate in their own treatment; secondly, those who were negative (that is, neither co-operating nor resisting); and, thirdly, those who actively resisted. He thought that at present in asylum administration there was an excessive tendency to consider that certifiable patients were to be regarded as unwilling unless there was definite evidence to the contrary; whereas in his view they should be regarded as willing unless the contrary was clearly shown.

Clinics, of course, were of the very greatest use, but there was a definite limit to their usefulness. In some cases they were certainly not a substitute for mental hospitals. In Maudsley there were no certifiable patients. All the patients were entitled to discharge on giving twenty-four hours' notice. Three-fourths of the Maudsley patients came through the out-patient department in the first instance, having in very many cases been sent to the out-patient department by their own doctors; those who did not come by way of the out-patient department came usually on the recommendation of a mental specialist. He attached much importance to having no certifications carried out at Maudsley. The willingness of the people to approach the institution voluntarily depended upon the knowledge that they would not be certified, or, in other words, that they could leave when they liked. He thought that all of them appreciated the voluntary nature of the institution, save perhaps a few whose intellects had been clouded since admission. More severe cases—though still willing and recoverable—were taken at Maudsley than at Chichester House.

In answer to the Chairman, Dr. Mapother said that the voluntary submission on the part of a patient for a definite period of residence in an institution would be a very useful thing in certain cases, such as drink and drug cases; there were also a number of patients who from day to day could hardly make up their minds whether they wanted to go or stay, and if the problem were solved for them they would be easier in their minds. He thought that the non-volitional patient should be dealt with in the clinics, provided such a patient was not objectionable to others. These non-volitional patients included many recoverable cases. Such cases were not taken at Maudsley Hospital at present, but in the clinic of the future they should be admissible.

Observation Hospitals.

Dr. Mapother went on to urge that fresh cases which were recoverable, but were unsuitable for treatment at clinics, should be first treated at observation hospitals, which would take the place of the present observation wards in workhouses. First of all there would be the voluntary clinic for out- and in-patients; then the observation home, to which patients who had ceased to be voluntary or were incapable of being managed in a voluntary clinic could be sent for observation and treatment, and as the last resort there would be the asylum. Some cases would go first to the observation home, without passing through the clinic, but he thought that before any case went to the asylum it should pass through the observation home.

Another reform which he would like to see brought about was for patients who came short of certification to be permitted to become voluntary boarders in private care; at present such patients could not be in private care unless they were certified. The private care of these voluntary patients should be subject to supervision and visitation in the same way as certified cases.

He deprecated in the present asylum administration the mixing up in one institution of different types of cases. If each institution had its own type of case contentment would be promoted, and the advantage of such a classification if voluntary patients were admitted to mental hospitals were obvious. Resistant patients might be confined to one or two institutions. At present, however the wards were classified, both refractory and quiet patients came into association in the gardens. The isolation of the chronic refractory patient in one institution was the only remedy. Patients whose violence lasted only a short time should be treated in one of the institutions for quiet patients, but a separate ward should be provided.

He mentioned that he had known a number of nurses—male and female—who had extraordinary skill in dealing with refractory patients, and some of them were so much engrossed in this work, which they regarded as a vocation, that they would threaten to resign if they were moved into a "quiet" ward. He was in favour of female nurses in male wards. At Maudsley this employment of female nurses had led to a very slight restriction in the class of patients taken—very much slighter than might be imagined, because some of the most difficult patients were more manageable by women than by men.

He wished to see other Maudsleys serving different centres of population, and he expressed the view that it would be an advantage economically and no disadvantage in other respects if the accommodation of Maudsley were doubled.

Nova et Vetera.

MEDICAL MEN MENTIONED ON THE PIPE ROLLS (1156/57—1186/87).

NEXT after Domesday Book, the Pipe Rolls are the most important of the public records of the kingdom. They are the accounts of the sheriffs of the counties of that revenue for which each was responsible annually at the Royal Exchequer. They also include statements of the expenses of the sheriffs in the King's service. The earliest in date of these records is the roll for the thirty-first year of Henry I (1130). This was published in 1833. The next rolls to be published (1844) were those for the first, second, and third years of Henry II. From the first year of this Henry the series is almost complete to the nineteenth century. Among the early specimens issued by the Record Commission, besides the early Pipe Rolls for the last year of Henry I and the first three years of Henry II, was the roll for the first year of Richard I and that for the third year of John. The Pipe Roll Society was founded in 1883 to complete the gaps between these early publications. The society issued its thirty-seventh volume in 1915, and then succumbed to the war; last year it was resuscitated, and it is hoped that the first volume of its new venture will shortly be in the hands of its members.

The volume containing the earliest roll is practically unobtainable at the present time; I have the second volume and a complete set of the *Transactions* of the society, with the exception of Vol. 24, which is unobtainable.

The first medical item on my list is as follows.

4 Henry II (1156/57).—"Et in Liberationes Constitutae Johanno Medico. xxxs. et vd."

"Liberationes Constitutae" were certain fixed payments charged on the King's lands. This occurs on the roll for Essex. In the same year under Northants:

"Et Radulfo Medico in terris datis xv libras numero. Et quietus est."

"Terrae datae" meant lands which the King had granted away from the *Corpus Comitatus*. The issue of the lands being no longer received by the sheriff, he had an allowance for them when rendering his account at the Exchequer. In the following year Dr. John's 30s. 5d. appears on the roll for Essex, but is not mentioned again in any subsequent year.

5 Henry II (1158/59): *Essex.*—"Et in perdonis per breve Regis. Et Radulfo Medico iii marcas. Et quietus est."

"Perdonae per breve Regis" were discharges of debts by writs or mandates of the King. The record expressly states that Radulfus was quit. In the same year under Northants:

"In terris datis. Radulfo Medico. xx libras. Et quietus est."

And under Hants:

"Et Girardo Medico Henrici filii Regis cs."

The roll for the sixth year of Henry II does not appear to contain any medical entry.

7 Henry II (1160/61): *Notts and Derby.*—Under "Nova Placita et Novae Conventiones": "Et Radulfo Medico xxvis. et viiid."

And under Essex:

"Et in perdonis per breve Regis, Radulfo Medico iiii libras."

8 Henry II (1161/62): *Northants.*—"Et Radulfo Medico vs. et quietus est. Et Radulfo Medico xiiiis. et iiid."

This 14s. 3d. of Dr. Ralph's is mentioned again in the same year under the Bishop of London "in perdonis per breve Regis," and again in the following year under the same heading. The rolls for the next two years are free from medical entries.

12 Henry II (1165/66): *Northumberland.*—"Idem VicеComes reddit Compotum de xxs. et xd. de terra Geruasii Medici. In Thesauro liberavit in II talliis. Et quietus est."

This entry is found in the roll for the next eight years and again in that for the year 1177/78. In the first entry only is the word "tally" found.

In the same year, under Notts and Derby, in the Honor

of William Peverill, under "Nova Placita et Novae Conventiones":

"Henrici Medici reddit Compotum de xxvis. et viiid. per fugaturio. In Thesauro liberavit et quietus est."

This 26s. 8d. appears to have been due for the worth either of a fugitive or more probably for the worth of the goods of the absconder. In any case, Dr. Henry had paid the sum and was quit.

13 Henry II (1166/67): *Northants.*—"Idem ViceComes reddit Compotum de xls. de Gaitintona, Radulfi Medici. In perdonis per breve Regis. Ipsi Radulfus xxxiiis. et iiiid. et debet dimidiam marcam."

There was also a little matter of xxs. owing from the same Ralph from lands in Berton. This appears to have been paid, and in the following year he paid up his half-mark due from Gaitinton, but he was not yet out of trouble, for in 1168/69, on the plea of Alan de Nevill, "Gaitintona Radulfi Medici debet iiii marcas pro iiii fabricis factis in forestam," and the debt of 4 marks appears on the roll for the next year. It does not seem ever to have been paid.

17 Henry II (1170/71): *Notts and Derby.*—Henricus Medicus appears with others for a sum of money "in operatione" Nottingham Castle. This entry occurs in all succeeding rolls for my period. The Latin word *aula* is used in some of the later entries instead of *castellum*. I think that Henry must have been an important person to have had anything to do with Nottingham Castle, for in mediaeval times this fortress was one of the most important strategic points in England.

18 Henry II (1171/72): *Hants.*—"Et in speciebus et electuaria per Josephi Medici x libras et viis."

21 Henry II (1174/75): *Lincs.*—"Robertus Medicus de Auford debet I marcam."

This occus under "Nova Placita et Novae Conventiones" of Ranulf de Glanvill and Hugh de Cressi. In the following year it is noted that he renders his account for "one marc," there is "in thesauro" half a mark, and he owes half a mark. In the next year he paid it and was quit.

23 Henry II (1176/77): *Cornwall.*—"Et Jordano Medico xs. in Carneto, per breve Regis de dimidio anno et amodo xxs. per annum."

This sum is entered against Dr. Jordan in all the succeeding rolls of my period.

26 Henry II (1779/80).—"Gilbertus Medicus reddit Compotum de v marcas quia pugil suus quem plegiavit retraxit se de duello. In Thesauro 2½ marks et debet 2½."

In the same year: "*et de lxs. de Willelmo pugili Gilleberti Medici pro recreantisa.*"

Under Wilts:

"Robertus Medicus et Osbertus filius Reginaldi et socii eorum reddunt Compotum de I marcam quia non habuerunt quos plegiaverunt. In corredio Regine liberavit per idem breve. Et quietus est."

In the next year Gilbert rendered his account of 2½ marks "*quia pugil suus quem plegiavit retraxit se de duello.*"

"In Thesauro xvis. et viiid. et debet xvis. et viiid."

In the following year he paid his 16s. 8d. "de misericordia pro duello," as a fine for the duel,* and was quit.

31 Henry II (1184/85).—"De oblatis Curiae. London et Middlesex. Cecilia uxor Roberti Medici debet xxs. pro recto de ix marcas versus Ricardum Speciarum."

32 Henry II (1185/86).—"Et in procuratione Godmanni Servientis Regis et Medicorum ejus, et pro medicamentis et victualibus et pannis et aliis necessariis eorum dum idem Godmannus apud Londinensem infirmabitur £6 13s. 4d. per breve Regis."

33 Henry II (1186/87): *Warwickshire.*—"Lambertus Medicus debet c libras pro dissaisina injusta."

This was at the plea of Richard, archdeacon of the county, and his fellows.

This is my last entry. I regret to have to end this article with a note of what appears to have been a swindle by a dishonest rascal of a physician in these early times. One only hopes that he paid his 100 pounds at some later date.

R. R. JAMES.

* Duellum=trial by battle.

England and Wales.

HOSPITAL ACCOMMODATION IN SOUTH WALES.

AT a recent meeting of the Cardiff Medical Society Dr. Colston Williams, in opening a discussion on the provision of hospital accommodation, summarized the major defects revealed by the inquiry of the Voluntary Hospitals Subcommittee in South Wales. He doubted whether voluntary hospitals could adequately meet the needs of the future. In South Wales more beds for medical cases were required, particularly for women and children, and also better facilities for treating orthopaedic conditions and conditions of the eye, ear, nose, and throat. Dr. R. Picken said that the population of Cardiff and East Glamorgan, numbering approximately 800,000, had access to only about 850 beds, of which 460 were in Cardiff. There was a possibility of adding a further 400 beds. The waiting list at Cardiff Infirmary was over 1,800. On a conservative standard of 2 beds per 1,000 of population, 750 additional beds were needed for the area; if a higher standard of 3 per 1,000 was adopted the number of beds required would be 1,550. In the area there were about 1,100 beds in Poor Law institutions in the area, with the prospect of the addition of a further 650. More use might be made of the fever hospital accommodation for such diseases as pneumonia, and more beds were needed for tuberculous patients. Voluntary subscriptions were not likely to be forthcoming in sufficient amount, and voluntary hospitals were unwilling to accept State assistance. The Poor Law authorities might be encouraged to increase their accommodation with the assistance of Government subsidies and with co-ordination through the Ministry of Health. Health authorities might also be stimulated to provide hospital accommodation for preventive work, including ante-natal, maternity, and infant wards, with open-air residential schools. Dr. B. Llewelyn Williams pointed out the need of closer co-operation between the existing voluntary hospitals, which should deal with acute cases requiring specialized surgical or medical treatment, while the Poor Law hospitals should treat primarily those patients whose main need was skilled nursing. The voluntary and the Poor Law hospitals should work together to a greater extent in Cardiff than was at present the case. The large city hospitals should similarly co-operate with small local ones, and patients should not be removed from their own neighbourhoods unless the local hospital was unable to deal with the case. There was much to be said for admitting to the staffs of these local hospitals all doctors practising in their vicinity who could take their share of the hospital work, with the assistance of physicians and surgeons of consultant rank from the larger hospitals.

HEAT IN THE TREATMENT OF DISEASE.

During the recent course in medical hydrology at London University, Dr. R. Fortescue Fox delivered a lecture on the use of heat in the treatment of disease, with special reference to rheumatic affections and catarrh. The report by the Ministry of Health on the prevalence of rheumatism in England has necessitated fuller consideration of the use of physical remedies in this disease, and the lecture embodied an account of the rationale of treatment by heat. Dr. Fox pointed out that physiologists had shown that normal animal metabolism rose to an optimum at a definite temperature, and that the close connexion between disease and body heat was indicated by the rise of temperature after microbic invasion, which appeared to be a necessary reaction in the process of recovery from acute illness. This connexion was also indicated by the depression of body temperature in chronic disease, a condition unfavourable to recovery because it signified impaired metabolism and a deficiency in the normal reaction to the disturbing causes. The lecturer added that the hottest baths were always associated with the coldest climates. Since the earliest times the northern peoples, including the North American Indians, Laplanders, Finns, Russians, and Chinese, had made habitual use of extremely hot vapour baths followed by exposure to cold, and a similar bath was used in ancient times in this country; in Greece and Rome more moderate

temperatures were employed. The heat bath, about 104° F., increased the temperature of the skin and body, the peripheral circulation, the volume of the circulating blood, and metabolism, whilst it lowered blood pressure. The cold bath, about 60° F., produced at first the opposite results, but later a nervous reaction occurred with stimulation of the nervous centres, and indirectly of the heart and respiration, thus increasing the activity of the circulation, the metabolism, and the body heat. The medical use of cold bathing appeared to be quite modern, and became extreme in the nineteenth century. Cold baths were dangerous for delicate people, invalids, and the aged, because in them the normal power of reaction to cold was defective or in abeyance; such people were "susceptible" to chill. This chilling, or actual lowering of the temperature of the body, signified the uncompensated removal of heat; the demands on heat production could not be met. While a few invalids always felt warm, the majority felt the cold; these conditions were probably associated with the basal metabolism and heat production in connexion with endocrine activity. Such chronic chilliness, generally associated with catarrh or metabolic disorders, might lead to serious illness, such as pneumonia, inflammation of the stomach, liver, and kidneys, or rheumatism. In many of these people illness might be prevented by the periodical systematic use of heat, followed by cold, the defective reaction to cold being thus repaired. Climates might be divided into (1) the hot and moist, prevalent in some parts of England, and beneficial in chronic catarrhal conditions and fatigue; (2) the hot and dry, or desert climates; (3) the cold and moist, with which British medical practitioners were mostly concerned, which were responsible largely for catarrh and for rheumatism; and (4) the cold and dry, exemplified by the winter climate of Canada and of high mountains, and in a milder but most valuable form by the east coast of Great Britain. The following indications for the use of heat were noted. In the prevention and treatment of catarrhal conditions the systematic use of contrast vapour baths was likely to be very beneficial. Dry, cool inhalation of finely divided particles from chloride springs had proved very valuable in respiratory catarrhs, especially in the case of children with enlarged glands and tuberculous bones and joints. Brief (60 to 90 seconds) hyperthermal baths (108° to 120° F.) were efficacious in the defective circulation associated with gastro-intestinal catarrh and Raynaud's phenomena. The painful exudations and deposits in the neighbourhood of joints and other fibrous tissues should be treated systematically by heat, the dosage being most important, and reaction being the chief guide. A series of very small and almost imperceptible reactions were the ideal, since these favoured recovery. The treatment of rheumatism at health resorts and physical clinics should extend over several weeks, the patient being warmly housed, as there was considerable danger of chill after the baths. At the close of the course the patient should be gradually hardened by exposure to cold. In all forms of traumatism the use of heat was indicated at one stage or another to relieve pain and tension and to promote absorption. In many cases, whether rheumatic, traumatic, or paralytic, the heat applied, as in the whirlpool bath, was a good preliminary to the manipulation and movement of injured parts of the body.

Alton Cripples' Hospital.

Founder's day at the Lord Mayor Treloar Cripples' Hospital, Alton, was celebrated on June 20th, when a bust of Sir William Treloar, erected in the grounds of the hospital, was unveiled by the Lord Chancellor (Viscount Cave). The memorial is a gift of a circle of personal friends. The Lord Chancellor, in response to a vote of thanks, proposed by the Right Hon. T. P. O'Connor, M.P., said it was a great honour to be allowed to unveil such a striking likeness of his old friend, whom those present did not look upon as an administrator or magistrate, but as the children's alderman and the children's lord mayor. For thirty years Sir William Treloar had carried on the Crippled Children's Christmas Hamper Fund; had been the moving spirit in the children's feast at the Guildhall, and his acquaintance with the crippled children of London had led him to organize the hospital at Alton and the home at Hayling Island, which were both doing such excellent work. At a meeting subsequently held in the college, the chairman, Lieut.-Colonel Lawson, emphasized the necessity of clearing off the debt incurred by building the isolation hospital, and the urgent need for extending the nurses' quarters. The institution required continuous and increasing support in order that it might do its work efficiently.

National Hospital for Diseases of the Heart.

The foundation stone of an extension of the out-patients' department of the National Hospital for Diseases of the Heart, in Westmoreland Street, Marylebone, was laid on June 13th by Colonel Walter Faber, Grand Master of the Order of Crusaders. The Crusaders, to the number of 250, all clad in mediaeval habit and carrying insignia, walked in procession along the streets between the parish church, where a preliminary service was held, and the hospital. In reply to a welcome from the secretary of the hospital, Colonel Faber said that he rejoiced that the Order's first public act of service should be devoted to the help of such an institution. The stone having been duly laid, Mr. E. R. Morris, C.B.E., chairman of the hospital, delivered an address in which he recalled that this hospital was founded in a small house in the neighbouring Margaret Street sixty-eight years ago. It was the first hospital—and still remained the only hospital in the world—devoted entirely to the special study and treatment of heart conditions. Special heart departments had since been established in general hospitals, thus justifying those who in the middle of the last century decided that cardiac conditions were so very important as to deserve an institution for themselves alone. After various removals to larger premises the hospital found its present home, and now a site adjoining the building had been acquired for the badly needed extension of the out-patients' department. In that department some 35,000 attendances were made every year, and the number of in-patients treated was from 350 to 400, the average period of stay being seven weeks. The cost of the work was £10,000 a year, and to carry through the extensions now begun the sum of £7,000 was needed.

London Ambulance Service.

A report on the London ambulance service was presented to the London County Council on June 23rd. During the year ended March 31st, 1925, the total number of calls dealt with by the ambulances was 31,700; of these, 5,000 were dealt with between the hours of 11.30 p.m. and 7.30 a.m. The average time taken to reach a case was 7.4 minutes. During the busiest hours on week-days thirteen ambulances are in commission, but under present arrangements this number is reduced to eight on Sundays. The number of cases dealt with on Sundays, however, shows a continual increase. On the first three Sundays of last May the calls were respectively 57, 77, and 83. Calls on the ambulance service continue to increase year by year; the highest number in any one year since the inception of the service was made in the year ending March 31st, and the number for the first quarter of the present calendar year exceeds the number for the corresponding quarter of 1924 by 600. The highest number of calls ever recorded on a single day (161) was on a recent Saturday (May 16th). The statistics show that the calls are most frequent during July; in July, 1924, the number of calls dealt with was 3,002. It is proposed to place in continuous commission from July 1st next three ambulance stations (Battersea, Highbury, and Paddington) which have hitherto been subsidiary—that is, have been closed during certain hours of the night and on Sundays.

Miller General Hospital.

Active work upon the extension of the Miller General Hospital for South-East London has been started. The hospital at present contains one hundred beds; the new building will comprise a block with three wards, each containing twenty-four beds, and six single-bedded rooms. In the basement of this block there will be a dining-room and classroom for the nurses; adjoining the block a main kitchen is to be provided, with storage accommodation, and

dining and recreation rooms for the maids. The new nurses' home will contain seventy-three bedrooms, as well as sitting-rooms, and will be capable of enlargement at a later date. The cost of the present extension will probably approximate £100,000. King Edward's Hospital Fund has promised £16,000 towards the cost, and at the present time the sums promised or received amount to about £60,000. The annual report of the hospital for the year 1924 shows that the expenditure exceeded the income by £489; the work of the hospital and of its convalescent home at Bexhill costs annually nearly £23,000. During the year 1,555 patients were admitted to the wards, an increase of 70 over the previous year.

Scotland.

MILK AND DAIRIES ACT.

THE Milk and Dairies (Scotland) Act, 1914, comes into operation on September 1st; it imposes important duties on local authorities, and their attention has been drawn to its provisions in a circular issued by the Scottish Board of Health, dated June 16th. The local authority may appoint a committee or committees for the exercise of its powers under the Act. The Act authorizes any local authority to whose district milk is sent to complain to the local authority of the district from which the milk originates if the former local authority has reason to believe that the provisions of the dairy by-laws are not being carried out. Power is given for the appointment of a veterinary inspector or inspectors, who are to be whole-time officers. Neighbouring authorities may combine for the appointment of a veterinary inspector, which must be sanctioned by the Board of Health. Inspection of dairies is to be carried out at least once a year, either by the veterinary inspector, the sanitary inspector, or the medical officer of health of the district, and powers of inspection are also to be conferred on similar officers of other districts in regard to milk consigned out of their district. All dairies must be registered with the local authority, which has power to revoke a certificate if the dairyman is or becomes unsuitable for carrying on the trade or if the premises are or become unsuitable for the purpose of the trade. Further, where milk is sold from a cart, van, or other vehicle within a district, such vehicle must be registered as premises within any district in which milk is sold from it. Various special measures are indicated for the prevention of disease; thus it is provided that the milk from a cow suffering from certain specified diseases shall not be sold for human food. Further, that a dairyman must give written notice to the local authority of any cow which appears to be suffering from any sore on the teats accompanied by suppuration or bleeding and on becoming aware that any person resident at or employed in connexion with his dairy shows symptoms of any infectious disease. Further, persons suffering from diseases which are enumerated, or who have been in contact with such persons, are not to assist in dairy work except under specified conditions. Powers are given to the local authority to stop the supply of milk in its district from any given dairy, and to require from dairymen lists of customers when the medical officer of health certifies that an outbreak of infectious disease is in his opinion due to the milk supply. Powers are also given to the veterinary inspector to apply the tuberculin test to any cow with the consent of the owner, and to local authorities to establish depots for the sale of milk specially prepared for consumption by infants under 2 years of age.

RESEARCH SCHOLARSHIP IN NEUROLOGY.

At a meeting of the University Court of the University of Edinburgh held last week, it was intimated that a legacy of £5,000 had been received from the estate of Miss Catherine S. Howden to found a scholarship for research work, preferably in the domain of nervous diseases. Intimation was received at the same meeting that a party of 175 Canadian undergraduates were to visit Edinburgh from July 6th to 10th, under the auspices of the Overseas Education League. It was decided to invite them to an afternoon reception in the McEwan Hall.

ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN.

The annual meeting of contributors to the Royal Edinburgh Hospital for Sick Children was held on June 16th. Sir John R. Findlay, Bt., chairman of directors, who presided, in moving the adoption of the annual report, regretted that the number of Edinburgh contributors and the amounts contributed remained small, despite the fact that the work of the hospital was of great public importance. He referred to the retirement of Mr. Fraser, surgeon to the hospital, who had been appointed professor of clinical surgery in the University, and of the matron, Miss Burleigh. The report showed that 2,727 cases had been treated in the wards during the year, as compared with 2,657 in 1923; of these, 1,543 were medical and 1,154 surgical. The average daily number of patients in the hospital had been 114, and the average duration of residence sixteen days. There had been a large out-patient attendance, the new medical cases having numbered 3,038, with 6,004 re-attendances; the new surgical cases had numbered 3,305, and re-attendances of these 11,133. In the out-patient department, 2,054 minor surgical operations had been performed, and in the ear and throat department 615. The total number of patients to whom the hospital had given assistance during the year was 29,553, as compared with 31,166 in the previous year. Total ordinary income had been £11,134, and the ordinary expenditure £15,815, leaving a deficiency of £4,681. This had been met by using about half of the legacies received during the year, which would normally have gone to capital. The report drew attention to the continued increase in the number of in-patients; the directors consider it inevitable that before long additional accommodation will have to be provided. Attention is also drawn to a clinic for mentally defective children established by Dr. John Thomson; in the twenty years during which it had been carried on it had dealt with nearly nine hundred cases. Many of these cases had been treated and supervised for several years, and the clinic had been of great service both to the hospital staff and to the medical profession in Edinburgh and beyond it. Professor Gulland, President of the Royal College of Physicians, who seconded the approval of the report, said that in his student days there had been very little teaching in regard to children's diseases, while now every student had to go through the course. He believed that there was no part of the student's training which was so useful in general practice as the training he got in the wards of the Sick Children's Hospital, where excellent work was being done.

CARE OF THE EDINBURGH BLIND.

At the annual meeting of the Royal Blind Asylum and School, Edinburgh, the Rev. Dr. Thomas Burns, chairman of directors, who presided, said that the outstanding feature of the year had been the admission of fifteen blind persons for technical training; in a year or two they would be able to take their place as efficient workers. The directors hoped that in course of time a generally higher standard of efficiency would be attained by all blind employees, and there was reason to expect that infantile blindness would be reduced more and more. He believed that local efforts had had the effect of stimulating interest in the welfare of the blind in other parts of the Empire. The subject had recently assumed such importance as to influence Parliament in passing measures to meet requirements, but further legislation was necessary. He considered that there was more and more evidence of a need for the provision of residential homes for elderly delicate blind persons whose relatives were not able to give them the care and attention they required. This applied particularly to women.

MONTROSE ROYAL ASYLUM.

The report presented to the annual meeting of Montrose Royal Asylum held on June 10th showed that there were on May 14th last 754 patients in the institution; the certified cases numbered 131, or 26 less than in the previous year. The average age of admission had been 45.9 years; 2 patients were under 15 and 13 over 70 years of age. Out of the causes of mental breakdown some physical disease had been responsible in 35 cases, while a hereditary tendency to insanity could be traced in one-third of the cases admitted. Dr. C. J. Shaw, physician superintendent, points out that pauperization, certification, and the stigma which attaches

to asylum care are serious obstacles to the treatment of mental disease at an early stage, and he comments upon the difference that exists in the attitude of the public in attaching a stigma to treatment in an asylum while placing no stigma upon treatment in, for example, a hospital for infectious disease. He thinks, however, that the public are developing a different attitude towards mental hospitals, and that this is largely due to the introduction of female nurses into asylum wards. When it is realized that the primary function of a mental hospital is curative as in the case of any other hospital, and when the voluntary system of admission is extended to rate-aided cases, patients will, he believes, apply for treatment more readily and with more satisfactory results.

Royal Scottish National Institution, Larbert.

The Royal Scottish National Institution for feeble-minded children at Larbert, the reconstruction of which has recently been completed, was visited by a large number of people on May 30th, when the Duchess of Montrose, one of the vice-presidents of the institution, was present. The institution, which was founded in 1862 for 28 mentally defective pupils, now accommodates about 500, and employs a staff of 100; it also has a long waiting list. The visitors were welcomed on behalf of the directors by Sir Alexander Gracie, who stated that in recent years it had been realized that institutions of this sort suffered from one great difficulty in the fact that the after-care of the pupils did not extend beyond 21 years of age. With increased knowledge and experience, however, the public were realizing that this was a mistaken policy. The Duchess of Montrose delivered an address upon the problem of the feeble-minded. No working-class mother, however devoted, could, she said, hope to give her afflicted child the advantages which this institution provided. When the small mental faculty possessed by each child was remembered, it was surprising how much they could be taught by the never-failing patience and devotion shown by the teachers. Mentally defective children could be well trained even if they could not be cured. The problem of the feeble-minded, apart from the insane, was a modern one. About fifty years ago a man was either considered sane or insane, and at that time mental deficiency was deemed insufficient reason for admission to an asylum, and the matter was largely ignored until the rapid increase of mental defect took place during the latter years of the nineteenth century. The Royal Commission appointed in 1908 to inquire into the care of the feeble-minded revealed a very pitiable state of affairs. Figures had been produced showing that one-quarter or one-fifth of all workhouse inmates, one-half of the girls in rescue homes, one-tenth of all prisoners and vagrants, and the majority of the inmates of homes for inebriates, were feeble-minded. Such facts cried for a remedy, yet even now the State only concerned itself with mental defectives up to the age of 16 or 21; after that they were turned loose on the community. This was, on grounds of social economy, a short-sighted policy, for the majority passed to the workhouses, gaols, and rescue homes, where they had to be maintained. A far better solution of the problem would be through permanent care in industrial colonies. In such places all grades of the feeble-minded could, according to their capacity, continue their work in the house, the garden, or on the farm or in industrial shops, and in this way they could become to a large extent self-supporting. It was satisfactory to know that the Scottish Council of Women Citizens' Associations was taking up this question with energy, and making an appeal throughout Scotland for a sum large enough to start a Scottish industrial colony. It was much to be hoped that such a colony would be started soon, so that the children trained at Larbert might be passed on there at the age of 16 or 18. At the Industrial Colony at Sandelbridge the inmates now numbered 300 persons, leading a contented and happy life, doing the work of the colony for themselves, and thus rendering it partly self-supporting. No scheme for social betterment was more urgent in Scotland than this, and for its initiation a sum of £40,000 was necessary. The party subsequently visited the institution, where children were seen busy at such occupations as rug-making, darning, and machine knitting. Classes of girls were making rush baskets, mats, and shopping bags, and in other workrooms girls were being trained in simple household duties, while the boys were engaged in tailors' and carpenters' shops.

Ireland.

Medical Meeting in County Wexford.

A meeting of the County Wexford medical practitioners was held recently in Enniscorthy, with Dr. G. E. Greene in the chair. Letters were read from Dr. P. A. Doyle, with regard to medical fees in accident cases, and from Dr. Brady, in relation to attending and giving evidence in State prosecutions. The pension clauses of the Local Government Acts, 1919 and 1925, were discussed, and, the Irish Medical Secretary having written to say he was taking legal advice in connexion with the advantages and disadvantages of both Acts, it was decided to postpone further consideration of the question until June 17th, when a joint meeting of the medical practitioners of County Wexford and County Wicklow would be held and Dr. Hennessy would be invited to attend. The meeting decided that it would be inadvisable to pronounce any opinion on the interim report of the Committee of Inquiry into Health Insurance and Medical Services until the issue of the final report. Drs. Dowse, Greene, Hickey, Murphy, and O'Brien were appointed as representatives to attend a meeting of delegates when summoned in connexion with the consideration of the reports of the Committee of Inquiry into the medical services. Arising out of a discussion of the resolutions relating to the duties of county hospital surgeons, passed at the meeting of the Irish Medical Committee held on May 11th, it was resolved that the notice of motion to rescind them be put on the agenda for the next meeting of the committee, so that they might be further and more fully discussed. Drs. O'Brien and Dowse having brought before the meeting the overcrowded state of the Wexford County Hospital, it was decided to ask medical officers to make inquiries from Dr. O'Brien and the secretary of the County Wexford Board of Health if beds were available before sending cases for admission, except in cases of urgency, which would be admitted at any time. Dr. Hickey moved, Dr. Lawler seconded, and it was unanimously resolved, to tender heartiest congratulations to Dr. Thomas Hennessy on his election to Dail Eireann, where his presence and intimate knowledge of the requirements of the medical profession would enable him to be of greater service than ever in furthering its many interests. The honorary secretary reported that a sum of £44 16s. was collected in County Wexford for the Organization Fund of 1924.

Pathological Laboratory for Mental Hospitals.

The suggestion of the Minister for Local Government regarding the establishment of a pathological laboratory at Grangegorman Mental Hospital, Dublin, was the subject of a special report by Dr. J. O'C. Donelan, the resident medical superintendent, which was submitted at a meeting of the joint committee of the hospital. In his report, Dr. Donelan stated that the pathological laboratory at Grangegorman might be developed into a valuable centre for work and study, but he did not think that there could be much field for it as a teaching centre in the immediate future, as there were at present three excellent schools of pathology in Dublin. The scheme of creating a central laboratory for all the mental hospitals of Ireland would, to be of any use, involve the appointment of a really first-class man, who had proved himself to be devoted to pathological work, and who would necessarily command a substantial salary. He would also require one, or probably two, assistants. The expenses would be considerable, and although Dr. Donelan was not without hope that something of this kind might ultimately be attained, and ought to be aimed at, he believed that the best results would be obtained by beginning on a small scale and developing as circumstances indicated. It was decided to send a copy of the medical superintendent's report to the Local Government Department for an expression of the department's views, and to defer action.

Correspondence.

PERINEAL DRAINAGE AND PROSTATECTOMY.

SIR,—Mr. William Billington's letter (June 20th, p. 1153) recalls some papers I published over sixteen years ago in which an attempt was made to combine perineal drainage with suprapubic prostatectomy by "a simplified method of performing prostatectomy by the combined routes."[1] I reported the results of 23 operations done by the method to the 22e Congrès de l'association française de chirurgie, 1909. The operative mortality in my small number was on a par with Young's 112 perineal cases—that is, none; and a study of the relativity of 4,539 perineal to the 1,932 suprapubic cases collected in my list is greatly in favour of the perineal route.

It seemed to me that an operation combining the advantages of both operations might lead to a better surgical success on the whole. I confess, however, that not many have tried the "combined method" of operating except the few who have seen it done; but three well known surgeons who were in difficulties in enucleating hard small prostates by the suprapubic operation until they were informed of the combined method used it with immediate success.

The length of time is not often less in performing the "combined method" than the suprapubic operation by itself. The apparent paradox is due to the fact that establishment of perineal drainage takes less than a high fraction of a minute to form, and subsequent enucleation of the prostate with two forefingers working *en rapport* secures rapid removal even in difficult hard cases.

It seems to me to be more than important to find out by careful inquiry why the mortality of the suprapubic operation by itself is higher than that of the perineal by itself.

The goal of operations is a recovery rate of 100 per cent., and when it is not gained we have to look out for weakness in the minute details of the plan of attack or of unsound judgement in the evaluation of diverse resisting defensive forces located within the camp—the patient.

Another point in Mr. Billington's letter which is of interest is that of drainage of the bladder after internal urethrotomy. I had the privilege of sitting next to that wise surgeon Mr. Pridgin Teale at Leeds during a function not long after I published a note on "Two cases of urethrectomy for traumatic stricture,"[2] in which I used neither drainage of nor a catheter tied in the bladder; he remarked that he always drained the bladder in cases he had operated on, and while accepting gratefully, I hope, his warm congratulations upon my daring, I felt a sort of chill from which I never recovered, for I always slipped a catheter into the bladder after that privileged occasion.—I am, etc.,

Llechryd, Cardiganshire, June 22nd. JOHN LYNN-THOMAS.

DISEASES DUE TO FASHION IN CLOTHING.

SIR,—I have been interested in the correspondence regarding my article (May 23rd, p. 960) on diseases due to fashion in clothing, particularly in the letter by Dr. W. Elder (p. 1152). I have, of course, seen cases, in patients of various ages, of erythema ab igne, also called "erythema a calore," on the legs from sitting in front of the fire, on the abdomen or elsewhere from the repeated application of hot compresses or hot bottles. Some persons seem to be more liable to develop this kind of erythema (and the resulting cutaneous pigmentation) than others, and the hypostatic element in the legs—notably when there are varicose veins—doubtless plays a part; I have, however, also seen it on the upper extremities. It has, in all the cases that I have met with, been distinguished by its more or less reticulate pattern (erythema reticulatum), like that seen in livedo reticulata. Probably the capillary circulation in some persons is more disturbed by heat, in others by cold. Perhaps the subjects of livedo reticulata (to which more than one member of a family may be specially liable) are unduly affected both by heat and cold.

The reticulate pattern above referred to was not apparent in the cases I discussed as "chronic erythema of the legs," and they were certainly not examples of erythema ab igne (a calore). I have never heard of chilblains being produced by the action of heat without cold. Chilblains are, in fact, a kind of erythema a frigore, though every sufferer knows that the improper application of heat, after exposure to cold, may favour their appearance. I should therefore not be surprised if "roasting" the legs in front of a fire after exposure to cold favoured the appearance of the erythema of the legs about which I wrote. But heat is probably no more the cause of that erythema than it is of chilblains.

On the other hand, true erythema ab igne of the legs was certainly not very rare in England before short skirts became the fashion, and was not confined to elderly individuals with varicose veins. The curious reticulate appearance puzzled, as it still does, medical men from the Continent, where the open fireplace is much less used than it is here. Some women thus affected admitted that when seated alone in front of the fire they raised their skirts to the knees to warm their legs better. But men were, and are, also occasionally affected in spite of their trouser-covered legs.

From some remarks which I have seen elsewhere on the subject of my paper there seems to have been confusion with a condition of chronic non-erythematous swelling or thickening of the soft parts about the ankles in women. That condition is quite distinct from the erythema with thickening to which I alluded; it is, I believe, sometimes associated with premature menopause and thyroidal insufficiency. On the other hand, cases similar to those to which I referred were evidently recognized by Professor V. Klingmüller of Kiel, and were described by him as "chilblains of the legs" in 1921.[1] His cases occurred in well nourished girls and young women, and he recognized the part played by short skirts and thin stockings in the etiology. He obtained good results from local turpentine injections.

In regard to Dr. Elder's remarks on chlorosis I do not think that much stress should be laid on improved general hygiene in food, ventilation, and open-air exercise as causes of the disappearance of the disease; it would only serve to divert attention from the real culprit (corsets), and mask the heinousness of the crime. Probably constipation was much overestimated as a factor in chlorosis; chalybeate treatment was often successful in spite of constipation. "Healthy" open-air exercise did harm to chlorotics when the real cause was unknown, and the very unhygienic method of keeping to bed or living in a basement, without having to climb up stairs, helped much, in conjunction with chalybeate treatment. I have Dr. J. H. Abram's permission to refer to a recent case of genuine typical chlorosis in a girl living in good surroundings (communicated to the Association of Physicians on May 30th). A fatty tumour weighing 1½ lb. had been removed from the side of the abdomen, and she had been tight-lacing because of the swelling. Complete recovery occurred in three or four weeks.—I am, etc.,

London, W.1, June 20th. F. PARKES WEBER.

APPENDICITIS.

SIR,—As it happened that I was the first[2] British surgeon to practise and advocate immediate operation in appendicitis, I was much interested in reading two addresses published in the BRITISH MEDICAL JOURNAL of April 18th in which, after the first twenty-four hours, expectant treatment was duly extolled. After reading these my sense of proportion was somewhat alleviated by perusing the last paragraph of the report of a discussion on the mortality of appendicitis at the Surgical Section of the Royal Society of Medicine, in which one of the speakers, in his reply, said: "If expectant treatment were generally adopted by

[1] BRITISH MEDICAL JOURNAL, October 3rd, 1908, p. 988.
[2] Ibid., November 8th, 1902, p. 1528.

[1] *Arch. f. Derm. u. Syph.*, Berlin, 1921, cxxxv, p. 256.
[2] *Philadelphia Med. Journ.*, December 2nd, 1899, and *Lancet*, February 3rd, 1900.

hospitals there was a danger that the practice would extend to those treated elsewhere." Yet I should have felt more satisfied if, instead of the term "danger," he had substituted "certainty." His closing phrase—"The surgeon who would, if and when necessary, operate"—makes me rigid. Without the introduction of the sense of sight, I am, after thousands of appendicectomies, unable to locate the "if" or the "when," but have found[1] that in a huge proportion of cases the "wait and see until things settle down" slogan results in adhesion formation running amok, the patient becoming saturated with deadly toxins, the lymphatics and veins and liver becoming stuffed with bacterial thrombi, and the intestinal walls becoming putrid with septic infiltration.—I am, etc.,

Buenos Aires, May 11th. JOHN O'CONOR, K.B.E., M.D.

MENTAL SHOCK AND THYROID DISEASE.

SIR,—Colonel McCarrison, in his lecture on some problems of thyroid disease (June 13th, p. 1065), did not mention the possible nervous origin of goitre. Last year I had a case in point—a married woman who took fright on seeing her son being pursued by an older boy, who evidently intended to chastise him severely. In consequence she suddenly developed a most marked goitre, non-exophthalmic in nature, which to a certain extent persists. The endocrine glands being correlated, is it not possible that fear may have so acted on the suprarenals as to affect adversely the thyroid, thus altering the ionic balance; or that, alternatively, the occurrence was an example of anxiety neurosis, so called, acting through the sympathetic?

Recently I had a case of goitre, developing in a primipara three months after birth of her child, which rapidly resolved, the sole treatment being a pinch of iodized salt taken with each meal. As there were no symptoms of hyperthyroidism, iodine was not contraindicated, and I have never seen a goitre disappear so completely in so short a time.—I am, etc.,

Cowdenbeath, June 13th. JOHN B. PRIMMER, M.B., Ch.B., D.P.H.

BRITISH MEDICAL WOMEN FOR INDIA.

SIR,—I have read recently in the JOURNAL at least two letters which suggest that in India there is unlimited scope for the superfluous medical women in England, if only they will grasp their opportunity. I should very much like to know if this is really the case.

Undoubtedly the mission hospitals can absorb many medical women, and for those who feel that they can conscientiously undertake it, and who can live on very small pay, such work cannot be too highly recommended. The Women's Medical Service for India (Countess of Dufferin Fund) is a small service, and I have been told that it is being gradually "indianized."

With regard to other work, I see in the *Pioneer* and *Statesman* newspapers advertisements for Indian sub-assistant surgeons, but I have never seen one for a European woman doctor. I have worked with Indian women doctors and know how capable some, at least, are. I have also visited one flourishing medical school for women and know of others; thus the supply of Indian women doctors is steadily increasing.

I should imagine that in native States the Indian doctor would have preference over the European, and I was told by one doctor (European) that she had not found such service satisfactory on account of the difficulty of "getting things done."

About prospects in State service in British India I know nothing—I have seen no advertisements in the BRITISH MEDICAL JOURNAL, or elsewhere, of appointments.

Private practice, except combined with, or subsequent to, a public appointment seems out of the question. In most places European women are attended by I.M.S. and R.A.M.C. doctors, and the Indian women, purdah and otherwise, are so conservative that it takes years to gain their confidence. In South India a knowledge of several languages would be of great assistance to anyone setting out "to help the Indian women."

This letter is the outcome of very limited experience in India; I hope it may elicit some real facts.—I am, etc.,

May 26th. MEDICAL WOMAN.

[1] *Lancet*, September 5th, 1914.

INDIVIDUAL MEDICAL DEFENCE.

SIR,—In reply to Dr. Gillbard (June 13th, p. 1110), allow me to state that he seems to misunderstand the object of my query to Dr. Robinson. While it may be *ultra vires* for a defence society to prosecute one of its members before the General Medical Council, as Dr. Robinson states, I showed by an example (May 30th, p. 1021) that a defence society may prosecute a member of another defence society. In formulating the new British Medical Association scheme it may be thought wise to exclude any such prosecutions and confine it entirely to defence. Personally, I do not think this wise, but that is only a single opinion. The object of my query was to give the topic consideration. If Dr. Gillbard will turn up the SUPPLEMENTS for July 28th, 1906 (p. 98), and August 4th, 1906 (p. 126), he will see therein that the Central Ethical Committee reported to the Representative Meeting of 1906: "That it is absolutely necessary in the interests of the medical profession that the Association should take up cases of a penal nature before the General Medical Council as complainants," etc. The debate, in which Sir Victor Horsley took part, makes interesting reading. If my "naïve query settles" the new scheme, according to Dr. Gillbard, surely *a fortiori* the Association should have been "settled" in 1906.

The difficulty then and the difficulty now is that many members of the General Medical Council are also members of the British Medical Association. In time this difficulty may resolve itself along the lines suggested by Lord Justice Atkin in his address to the Middlesex Hospital Medical Society, when he said that "the question whether medical men might not fairly claim to have decisions affecting professional conduct made subject to some judicial investigation instead of being left to the decision of any tribunal which did not act upon legal principles and upon evidence which could be tested and controverted by cross-examination" (May 16th, p. 936). The New Zealand "E.R.A." cult case is a good example of a case affecting professional conduct tried before a high judicial tribunal.—I am, etc.,

Warrington, June 13th. J. S. MANSON.

SICKNESS AND ACCIDENT INSURANCE.

SIR,—The recent liquidation of an insurance company issuing "sickness and accident policies" has brought home to many medical men the inadvisability of taking an insurance policy of any kind without obtaining independent and impartial advice such as the Medical Insurance Agency was formed to give.

This Agency, founded by the *British Medical Journal* and the *Lancet* in 1907, has never recommended the company in question, but is prepared to offer expert advice to, and to use all possible effort to assist, those members of the profession who have not previously made use of the facilities here provided for them.

An advertisement of the Medical Insurance Agency is published this week (advertisement page 5).—I am, etc.,

L. FERRIS-SCOTT,
Secretary, Medical Insurance Agency,
British Medical Association House.

June 22nd.

SIR,—From applications which have been received by the Medical Sickness, Annuity and Life Assurance Society, Limited, 300, High Holborn, W.C., it appears that a number of medical men are unfortunately involved in the failure of the Profits and Income Insurance Company.

The directors of the Medical Sickness Society (which was formed in 1884 by the late Mr. Ernest Hart on mutual lines, solely for the medical and dental professions) have carefully considered in what way they could best assist their colleagues in their present difficulty, and are prepared to give consideration to any applications which may be made to them. Inasmuch as the sickness premiums

charged by the Profits and Income were considerably higher than those charged by this society, policy-holders in many cases can obtain the same benefits from this society as those for which they insured in the Profits and Income several years ago without paying increased premiums. Naturally such applicants will now be desirous of ascertaining the financial position of any society or company in which they may desire to insure, so that they may be confident that their claims will be met.

So far as the Medical Sickness Society is concerned I would, with your permission, refer them to the advertisement page in this issue of the JOURNAL, from which they will see that separate funds exist for life assurance and for sickness and accident, invested in sound securities, properly vouched for.—I am, etc.,

FRANCIS J. ALLAN,
Chairman, Medical Sickness, Annuity and Life Assurance Society, Ltd.

June 22nd.

INMAN *v.* TANNER.

SIR,—In relation to the above suit (reported in your issue of June 20th), I feel it should be known that I received great kindness and loyal help from my professional brothers. The following gave valuable assistance and attended the High Court to give evidence on my behalf: Dr. Cammidge, Dr. Sidney Phillips, Professor Maclean, and Dr. Worster-Drought; and many others, including Sir William Willcox, were prepared to do so also.

It was a splendid example of loyal fraternity, and I am deeply grateful.—I am, etc.,

HERBERT TANNER.

London, W., June 23rd.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons has this week passed the Finance Bill through report and read it a third time. It has also debated foreign affairs. Next week it will probably discuss the Contributory Pensions Bill and unemployment.

At last week's meeting of the House of Commons Army Committee Sir Richard Luce brought forward the question of the conditions under which medical men enter and serve in the R.A.M.C. The committee expressed sympathy and promised support.

Income Tax Allowance for Wear and Tear.

A concession of importance to medical practitioners was obtained by Dr. Fremantle during the report stage of the Finance Bill. He moved, and the House accepted, a new clause declaring that—

Rules 6 and 7 of Cases I and II of Schedule D (which provides in connexion with the charge to income tax under that schedule of the profits or gains of a trade for the allowance of deductions in respect of the wear and tear of machinery and plant and in respect of expenses incurred in replacing obsolete machinery or plant) shall apply as if references in those rules to the profits or gains of a trade included references to the profits or gains, whether assessable under Schedule D or otherwise, of a profession, employment, vocation, or office, and, in relation to profits or gains assessable under some schedule other than Schedule D as if the provisions of the said rules were applicable to the tax under that other schedule.

Provided that where the profits or gains are not assessed under Schedule D the powers of the additional Commissioners, under paragraph (4) of the said Rule 6, may be exercised by the General Commissioners.

Mr. Guinness, the Financial Secretary of the Treasury, said the Government was glad to accept the clause which Dr. Fremantle had put down in consultation with the Treasury. It carried out the recommendations of the Royal Commission and extended the income tax allowance for wear and tear to plant and machinery—an allowance which had long been enjoyed by traders—to professional people and employees who, in the opinion of the Royal Commission and the Government, were fairly entitled to the same advantage.

It was subsequently pointed out in the Lobby that under the new clause the medical practitioner will be able to obtain an abatement of income tax in respect of the upkeep and replacement of his motor car.

Public Health Bill.

During the report stage of the Public Health Bill Mr. Herbert Williams moved a new clause, which also stood in the name of Dr. Fremantle. This clause applied to any room not already regulated under the Factory and Workshop Act, 1901, or the Public Health (Regulations as to Food) Act, 1907, in which food is sold or prepared for sale, or stored or kept with a view to future sale. No room is to be used for such purposes if a sanitary convenience is in it or communicates directly with it, or if offensive odours therefrom can penetrate to it, or if the cistern for supplying water to the room communicates or discharges directly into any sanitary convenience. If any drain or pipe for the conveyance of sewage is in the room its inlet must be efficiently trapped. The room must not be used as a sleeping place and must not communicate with any sleeping place so as to cause unreasonable risk of contamination to food in the room. It must be ventilated adequately unless used as a cold store. The occupier is under an obligation to keep the room clean and to take reasonable steps to prevent the contamination of food therein, and the cleanliness of apparatus and utensils. Power is provided for the medical officer or sanitary inspector to enter and inspect any room to which these provisions apply. Food is defined as every article of food and drink used by man, other than drugs and water, and also flavouring matters and condiments.

The clause was accepted by the House and Government, and was added to the bill without a division. Any local health authority may now adopt and enforce it.

On a further clause dealing with the payment of "reasonable" wages to municipal employees, Mr. Jack Jones, in moving an amendment as to the pay of manual workers, said the medical officers of health laid down a rule that they must be paid a certain rate for their services; although the local authority to which he belonged did not agree, they felt compelled to pay it because the medical officers were strong enough to make them. The amendment was withdrawn, and the bill was reported to the House and read a third time.

Births and Deaths Registration Bill.

The Births and Deaths Registration Bill, introduced by Dr. Fremantle, is to be withdrawn. After correspondence, the Minister of Health lately asked Dr. Fremantle to see, along with other promoters of the bill, the Registrar-General and a representative of the Home Office, for the purpose of agreeing on the basis of a revised bill that could be introduced next session as a private member's measure, with a prospect of the Government adopting it. The suggested conference has been held and a subcommittee has been set up on the subject, on which not only the Government departments concerned are represented, but also the Federation of Medical and Allied Societies, who are the original promoters of the bill, and the British Science Guild, which supports it.

Nursing Homes (Registration) Bill.

Mr. Gerald Hurst has withdrawn the Nursing Homes (Registration) Bill on receiving an assurance from Dr. W. E. Elliot (Under Secretary of Health, Scotland), that the Government will appoint a Select Committee to go into the subject. Dr. Elliot pointed out that time was inadequate for the passage of the bill this session. Mr. Hurst recognized that the bill could not become law this session, but said it was supported by the great majority if not by all the nurses in the country. It aimed at preventing bogus institutions from defrauding the public.

Public Health (Scotland) Bill.

The Public Health (Scotland) Bill was put down for report last week, but was crowded out by a debate on China. The Government does not intend to abandon it, but some considerable time may pass before it can be brought before the House of Commons. Dr. Shiels proposes to move an amendment to it.

National Insurance.—Mr. Groves asked the Minister of Health, on June 23rd, if he was aware that his officers connected with national health insurance had recently decided to charge against the funds of Local Insurance Committees the cost of investigating excessive prescribing, and that these investigations were carried out for the purposes of his department; and whether he would arrange for the necessary expenses incurred to be borne by his department and not imposed upon the Local Insurance Committees. Sir Kingsley Wood replied that Mr. Groves was under a misapprehension in suggesting that there had been any change of policy in this matter. It was always intended that the cost of these investigations should be met from the funds available for the administration expenses of Insurance Committees. Mr. Groves also asked, on June 23rd, if the Minister of Health was aware that Local Insurance Committees had received notice of amended regulations which proposed to remove the necessity for the Minister to appoint a practitioner to serve on an Insurance Committee where there were only twenty-five members. Sir Kingsley Wood replied that there had been no change in the medical representation since 1922. The regulations referred to by Mr. Groves contained no new provisions. No evidence of dissatisfaction had reached him.

Health Insurance Surpluses.—On June 22nd Mr. Short asked the Minister of Health whether he had received representations from approved societies respecting the pooling of national health insurance surpluses. Mr. Neville Chamberlain said this subject had been dealt with in the evidence given by approved societies before the Royal Commission on National Health Insurance, and would receive his consideration when the Commission had made their report.

Health Instruction.—Asked whether he could take any steps to promote the medical education of the people, the Minister of Health said many local authorities already provided simple medical information, and a proposal to extend the powers of local authorities in this matter was now before Parliament. The

Ministry of Health had recently published a memorandum by the Chief Medical Officer on public education in health. Lord Eustace Percy (President of the Board of Education) said he did not think it necessary for him to suggest to local authorities and governing bodies that lessons in personal and public hygiene should form part of the curriculum at girls' secondary schools.

Medical Referees.—Asked about a letter to the press from a medical referee under the Workmen's Compensation Acts, the Home Secretary said medical referees were not civil servants but private practitioners paid by fees for their services. No rules had been laid down about communications by them to the press on subjects connected with the Acts, but he was sure the referees generally appreciated the responsibility of their special position. He saw no reason why the writer of the letter in question should not be retained on the list of medical referees. In answer to a further question the Home Secretary said he did not consider it necessary or desirable to limit the power of a medical referee to deciding the disability under which a man was suffering.

Local Medical Research Laboratories.—Mr. Groves, on June 23rd, asked if the Minister of Health had considered the handicap to local medical research committees in the non-provision of pathological laboratories in connexion with local hospitals; and whether, in connexion with the Government's plans of research work, he would consider the provision of such equipment for the use of local medical men. Sir Kingsley Wood, who replied, said that there were no funds available at present for the provision of pathological laboratories for the assistance of local committees of this kind. In any future developments of health policy the provision of such laboratories would be borne in mind.

Milk and Disease.—The Minister of Health has received representations from local authorities urging legislation to allow greater precautions to be taken against the spread of disease by milk. Asked whether he would introduce legislation making it compulsory for dairymen, cowkeepers, and milk vendors to give immediate notice to the local authority of any illness among their employees, Mr. Neville Chamberlain said the suggestion would be considered when the Milk and Dairies (Consolidation) Act, 1915, came into operation, and Milk and Dairies Orders had to be made under it.

Mentally Defective Children.—On June 22nd Lord Eustace Percy (President of the Board of Education) told Mr. Paling that he was informed that the West Riding authority was making arrangements, in accordance with the suggestion contained in Circular 1349, for the supervision of all mentally defective children in the area whose admission to special schools could be secured. The matter was one which he had no doubt would be further dealt with in the programme of educational development which he had asked the authority to submit to him.

Venereal Diseases.—On June 19th Mr. Neville Chamberlain, in reply to Sir J. Davidson, said that the joint deputation of the Society for the Prevention of Venereal Disease and the National Council for Combating Venereal Diseases which called upon him urged the necessity for immediate legislation to permit of the open sale of preventive material with concise directions for its use, as recommended by the Trevethin Committee. Since the deputation was received he had been in communication with the two societies on certain preliminary points which needed to be settled before the question of legislation could be considered, and he was awaiting a reply to a letter which he addressed to them on May 15th.

Medical Services in Kenya.—On June 22nd Lieut.-Colonel A. McDonnell asked the Secretary for the Colonies the percentage of local tax revenue expended on medical and sanitary services by the Governments of Kenya, Uganda, Tanganyika, Nigeria, Gold Coast, and Sierra Leone. Mr. Amery (Secretary for the Colonies) said that taking the figures from the current estimates, and including expenditure on sanitary services shown under other heads, the percentages were: Kenya, 12.3; Uganda, 20.8; Tanganyika, 17.23; Nigeria, 21.9; Gold Coast, 16.3; and Sierra Leone, 16.7. The Nigerian figures were, however, abnormal, owing to certain exceptional expenditure of a non-recurrent character.

Mosquitos in England.—Mr. Neville Chamberlain said the prevalence of mosquitos and of other noxious flies in many parts of the country had received expert study in the Ministry of Health for some years; the results were at the disposal of local authorities and of individual inquirers, and would be published shortly. It had been shown that the destruction of mosquitos could not be secured by the adoption of any single or simple formula. Any useful action must depend upon the identification of the species prevalent in the area and the adoption of appropriate measures.

R.A.M.C. Officers.—On June 22nd Lieut.-Colonel Heneage asked the Secretary for War what was the shortage in Royal Army Medical Corps officers in the army; how many civilian doctors were employed instead; and what was the extra cost, if any, to the Exchequer. Captain King (Financial Secretary to the War Office) said the shortage of Royal Army Medical Corps officers was 86. Of these 30 would be under instruction at the Royal Army Medical College and elsewhere, leaving a shortage of 56 officers doing duty, which was made up by employing 21 non-regular officers and 35 civilian practitioners. No extra cost to the Exchequer was involved.

Birth Control.—On June 23rd Mr. Thurtle asked the Prime Minister if he could give the House an opportunity of directing that maternity centres provided at the cost of public funds should be free to give information on birth control to such married women as might desire it. Mr. Baldwin replied that in the present state of public business it would be impossible to find time for this, unless an opportunity should arise on the Estimates of the Ministry of Health. Lady Astor asked whether the Labour party were not acutely divided on this question.

Nurses' Hours and Pay.—Colonel Day asked the Minister of Health a question as to the difficulty experienced by hospitals and infirmaries under his authority in obtaining the most suitable type of young women as nurses; whether he would make the necessary suggestion to local authorities, with a view to conditions, hours of labour, and remuneration being so improved as to allow nurses and sisters a greater measure of freedom for recreation, in order that the best type of women might be attracted to this vocation. Mr. Neville Chamberlain said he was aware that difficulties of this kind had been experienced, but he understood that the position was better, and that the conditions of employment had generally been substantially improved; he saw no advantage in intervention in the manner suggested.

India.—In reply to a question as to small-pox in Madras and Calcutta in recent years, and asking whether, seeing that small-pox in Indian towns had not been controlled by vaccination, the Secretary of State would require all the Governments of India to take steps to improve the sanitary conditions of the larger towns, Earl Winterton said that the Secretary for India was aware of the facts, but had no power to issue instructions as public health was a transferred subject.—Mr. Dunnico, on June 23rd, asked the Secretary for War whether the instructions in regard to vaccination, under which medical officers on duty with troops in India were required to satisfy themselves once in each year that every man, woman, and child under their care was sufficiently protected by vaccination, were still in force; and, if so, what explanation had the army medical authorities to make in regard to the cases of small-pox amongst British troops in India during 1920, 1921, and 1922, who were stated to have been vaccinated, or to have been vaccinated unsuccessfully, as recorded in the annual reports of the Public Health Commissioner with the Government of India for the years in question. Earl Winterton replied that the answer to the first part of the question was in the affirmative. The current regulation showed that the instructions applied only in regard to persons who consented to be vaccinated. As regarded the second part of the question, he had no detailed information beyond that contained in the reports referred to, which was supplied to the Public Health Commissioner by the army medical authorities.—The average daily number of women employed in coal mines in British India in 1923 was 63,411, of whom 40,136 were employed underground.—On June 22nd Earl Winterton stated that the amounts of opium consumed in Calcutta (including the suburbs, and the towns of Howrah and Bally) and at Rangoon in 1923-24 were respectively 185 lb. and 226 lb. per 10,000 of the population. The amounts consumed in the districts of Amritsar, Bombay, Karachi, and Madras were respectively 56, 86, 43, and 53 lb. per 10,000. No pronouncement by the medical profession in India as to the normal amount per 10,000 considered adequate was on record.

Notes in Brief.

The Departmental Committee which considered, among other matters, the suggestion that motor omnibuses and charabancs should be required to carry a first-aid outfit, was not satisfied that the circumstances warranted special regulations directing such provision.

The Foreign Office is not aware that any of the signatory Powers have deposited ratifications to the conventions and protocols drawn up at the Geneva opium conferences.

On January 1st, 1925, 1,205,267 persons in England and Wales were in receipt of Poor Law relief.

The Home Secretary is not aware that the metropolitan police refuse to allow the removal to hospital in private motor cars of persons injured in street accidents, but it is dangerous to move many common types of injury in any vehicle but an ambulance.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE diploma in medical radiology and electrology has been granted to A. Burrows, M.D.Lond., E. P. Cumberbatch, M.B., B.Ch.Oxon., and G. H. Orton, M.D.Cantab.

At a congregation held on June 20th the following medical degrees were conferred:

M.D.—E. V. Beale, R. H. White, F. D. Howitt.
M.B., B.CHIR.—T. S. Goodwin.
M.B.—R. K. Wilson.

At a congregation held on June 23rd the following medical degrees were conferred:

M.B., B.CHIR.—T. H. Sims, M. D. Vint, F. N. Green, F. C. Cozens, F. A. H. Simmonds.
B.CHIR.—R. B. Fawkes.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—C. E. Hagenbach, E. J. Jones, F. G. Martin, R. D. Mason, G. H. Weeber, J. W. Whitney.
MEDICINE.—I. H. Mackay, C. J. Rozario, H. Winstanley, H. J. F. Wood.
FORENSIC MEDICINE.—T. H. Harrison, E. W. D. Long, C. S. Netscher, J. I. N. O'Sullivan.
MIDWIFERY.—T. H. Harrison, A. H. Henson, N. H. Ibrahim.

The diploma of the Society has been granted to Messrs. I. H. Mackay, C. J. Rozario, and H. Winstanley.

The Services.

INDIAN MEDICAL SERVICE.

ANNUAL DINNER IN LONDON.

THE annual dinner of the Indian Medical Service in London, which was held on June 17th under the chairmanship of Lieut.-Colonel A. W. Alcock, C.I.E., F.R.S., was conspicuously successful. It was attended by ninety-two officers and three guests. Among the guests was Lieut.-General Sir W. B. Leishman, K.C.B., K.C.M.G., F.R.S., Director-General of the Army Medical Service. This was an innovation, and so was the fact that the speeches after dinner, though not long, were a little more than formal votes of thanks. The Chairman, in proposing the toast of "The Service," sketched the scientific achievements in the past of members of the Indian Medical Service, and said that officers still on the active list were carrying on the tradition. The toast of "The Guests" was given by Sir R. Havelock Charles, G.C.V.O., K.C.S.I., who laid particular stress on the presence of the Director-General A.M.S. Sir William Leishman, on rising to reply, was warmly received; he also paid a tribute to the scientific work of officers of the Indian Medical Service, and went on to express the pleasure with which he found himself among them. Then Sir Leonard Rogers, C.I.E., F.R.S., proposed the health of the Chairman, and spoke of the high value of the scientific work done by Colonel Alcock both in India, and, since his return home, as a member of the staff of the London School of Tropical Medicine. Colonel Alcock having replied, a toast to the two secretaries, Colonel John Anderson, C.I.E., and Colonel J. J. Pratt, was received with great enthusiasm. Coupled with their names was that of Lieut.-Colonel Fleming, the honorary secretary in India. Colonel Anderson, in the course of his reply, said that, largely through the exertions of Colonel Fleming, both the number of members subscribing to the dinner fund and its financial position had greatly improved. He went on to relate some stories, with which we regret we are unable to enliven our pages. Colonel Pratt also replied, and the company broke up to renew old friendships, some of those present not having met since they served together in India thirty or forty years ago. The following is a list of the members and guests present:

Guests.—Lieut.-General Sir W. B. Leishman, K.C.B., K.C.M.G., F.R.S., Sir Dawson Williams, C.B.E. (the *British Medical Journal*), Dr. E. C. Morland (the *Lancet*).

Members.—*Major-Generals:* Sir R. H. Charles, G.C.V.O., K.C.S.I., Sir G. G. Giffard, K.C.I.E., C.S.I., G. F. A. Harris, C.S.I., R. Heard, C.I.E., Sir P. Hehir, K.C.I.E., C.B., C.M.G., H. Hendley, C.S.I., A. Hooton, C.I.E., J. B. Smith, C.B., C.I.E. *Air-Commodore:* D. Munro, C.B., C.M.G. *Colonels:* H. Ainsworth, A. Cochrane, J. Crimmin, V.C., C.B., C.I.E., A. A. Gibbs, T. A. Granger, C.M.G., J. A. Hamilton, C.M.G., A. J. Macnab, C.B., C.M.G., E. L. Perry, D.S.O., J. J. Pratt, H. Austen Smith, C.I.E., C. N. C. Wimberley, C.M.G. *Lieut.-Colonels:* W. G. P. Alpin, O.B.E., J. Anderson, C.I.E., R. F. Baird, G. T. Birdwood, E. W. C. Bradfield, O.B.E., J. T. Calvert, C.I.E., D. G. Crawford, J. M. Crawford, O.B.E., C. D. Dawes, C. L. Dunn, A. M. Fleming, A. T. Gage, C.I.E., E. V. Hugo, C.M.G., T. Hunter, C.I.E., C. H. James, C.I.E., S. P. James, J. G. Jordan, R. S. Kennedy, D.S.O., *M.C.*, J. C. G. Kunhardt, Clayton Lane, W. B. Lane, C.I.E., C.B.E., W. H. Leonard, R. McCarrison, C.I.E., F. O. N. Mell, C.I.E., A. Miller, T. R. Mulroney, J. G. P. Murray, F. O'Kinealy, C.I.E., C.V.O., N. Rainier, C. H. Reinhold, Sir J. R. Roberts, C.I.E., Sir L. Rogers, C.I.E., F.R.S., E. R. Rost, O.B.E., H. E. Stanger-Leathes, S. Browning Smith, C.M.G., R. Steen, Ashton Street, W. A. Sykes, D.S.O., C. Thomson, W. H. Thornhill, J. H. Tull Walsh, H. J. Walton, C. E. Williams, Ellacott L. Ward, D. P. Warliker, N. M. Wilson, O.B.E., H. G. L. Wortabet, A. C. Younan. *Majors:* H. L. Batra, O. A. R. Berkeley-Hill, Sir T. J. Carey Evans, *M.C.*, R. A. Chambers, O.B.E., D. Coutts, M.B.E., G. F. Graham, A. E. Grisewood, R. Knowles, B. E. M. Newland, P. M. Rennie, C. J. Stocker, *M.C. Captains:* P. M. N. Antia, H. L. Barker, S. D. Billimoria, Leo Blake, H. Horan Brown, H. R. Cursetji, W. P. Hogg, *M.C.*, N. S. Jatar, D.S.O., V. R. Mirajkar, C. S. V. Ramanan, W. C. Spackman, P. Vieyra.

OFFICERS FOR THE R.A.M.C. SUPPLEMENTARY RESERVE.

IN an official announcement issued on June 16th the War Office states that commissions in the Royal Army Medical Corps Supplementary Reserve of Officers are open to members of the medical profession engaged in civil practice. The object of this Reserve is to complete and maintain the various medical units of the Regular Army at war strength on mobilization; and the officers are divided into two categories. Those in the first category (Category B) have to undergo a preliminary training at the R.A.M.C. Depot, and an annual training of fourteen days with a selected formation or unit of the Regular Army. The preliminary training lasts normally for six weeks, but in the case of officers holding Certificate A or B medical of the Officers' Training Corps it is either dispensed with entirely or limited to three weeks. The other category (Category C) is intended for medical men with previous service and those possessing special professional qualifications. Officers in this category are not required to do either preliminary or annual training. The present requirements include a number of specialists in surgery, medicine, mental diseases, x rays, pathology, bacteriology, and hygiene, who will as far as possible be employed in their special subjects on mobilization.

All commissioned officers are paid an annual gratuity of £25, and those in Category B, in addition, receive pay and allowances as for regular officers during all training. Normally an applicant's age should not exceed 32, but this limit may be dispensed with in special cases. The rank on appointment is that of lieutenant. Promotion, in Category B, will be to captain after three and a half years' commissioned service; to major if qualified after twelve years' commissioned service, after which period officers will be transferred to the Regular Army Reserve of Officers; in Category C promotion to captain after three and a half years' commissioned service, and after ten years' service transferred to the Regular Army Reserve of Officers. A candidate for Category C who served as an officer in the R.A.M.C. during the great war will be allowed to count such service for rank on appointment, for promotion to captain, and towards the ten years' period of service preceding transfer to the Regular Army Reserve of Officers.

Forms of application for appointment can be obtained, on written request, to the Under Secretary of State for War (A.M.D.1), War Office, Whitehall, London, S.W.1.

DEATHS IN THE SERVICES.

Colonel Matthew Denis Moriarty, Bengal Medical Service (ret.), died at Guildford on May 24th, aged 76. He was born on January 26th, 1849, the third son of the late Very Rev. Thomas Moriarty, M.A., D.D., Dean of Ardfert, and was educated at Trinity College, Dublin, where he had a brilliant career, gaining a medical scholarship on entrance as an undergraduate, and taking first place in the examination for the medical degrees, thereby gaining the university medical travelling prize. He graduated as B.A. in 1869, as M.B. in 1872, and subsequently proceeded M.D. in 1891, also taking the F.R.C.S.I. diploma in 1883. Entering the I.M.S. as assistant surgeon on October 1st, 1872, he reached the rank of colonel on October 25th, 1902, and retired on October 25th, 1905. Most of his service was passed in civil employment in the North-West (now the United) Provinces; on promotion to administrative rank he was appointed Inspector-General of Civil Hospitals in the Central Provinces. After his retirement he settled at Guildford, where he occupied himself chiefly in his favourite pursuit of gardening. In 1878 he married Janet Elizabeth, second daughter of the late Surgeon General James Irving, I.M.S. She died in India in 1887. He leaves two sons, the elder of whom is a member of the medical profession, and two daughters.

Fleet Surgeon Edward Ferguson, R.N.(ret.), died at Merchiston, Edinburgh, on June 9th, aged 74. He took the L.R.C.S.I. in 1874, and the L.K.Q.C.P. in 1876; he entered the navy soon after, and attained the rank of fleet surgeon in 1899. During the Chili-Peruvian war, in 1879-83, he was serving on the Pacific station as surgeon of H.M.S. *Thetis*, and was landed to do duty in the Peruvian hospital at Lima; for this he received the thanks of the Government of Peru and its war medal.

The Territorial Army Ambulance Challenge Shield Competition, 1925, held at the Duke of York's Headquarters, Chelsea, on June 13th, was won by the 143rd (South Midland) Field Ambulance with 367 marks out of a possible 400. The 125th (East Lancs) Field Ambulance was second with 328 marks.

Obituary.

PROFESSOR A. DEPAGE,

Brussels.

WE have to record with deep regret the death of Professor Depage of Brussels, after a long illness. He was well known throughout the surgical world, first as secretary-general of the International Society of Surgery, and afterwards as one of the most accomplished military surgeons produced by the war. Madame Depage, who spoke English well, was as well known in this country as her husband, and her tragic death in the foundering of the *Lusitania* caused widespread sorrow.

We are indebted to Sir D'ARCY POWER for the following tribute to Professor Depage:

The death of Dr. Antoine Depage removes a great Belgian surgeon and deprives England of a staunch friend. My acquaintance with him dates from 1902, when he invented, organized, and, with the help of his brother-in-law, Dr. Lorthioir, carried to a triumphal issue the foundation of the Société Internationale de Chirurgie. He was the secretary-general whilst I acted as local secretary for Great Britain and Ireland. The meetings of the society were held triennially in Brussels until we became positively ashamed of the hospitality so lavishly bestowed upon us, and it was determined to meet where we could offer some return to our Belgian friends. The United States, Paris, and London received the society in turn, and at the

meeting in the United States Depage went as president; in that office he was succeeded by Dr. W. W. Keen, and he by Sir William Macewen. No sooner had he returned from the United States in 1914 than the war broke out, and he plunged at once into the career which made his name famous as a great military surgeon. In October, 1914, he opened Red Cross hospitals at Calais for the relief of the wounded, and a few months afterwards he established another at the Ocean Hotel at La Panne, where, with many English nurses, such good work was accomplished that it became the Belgian surgical headquarters. In all his labours he was most ably assisted by his devoted and fascinating wife. Perhaps one of the most trying events in my life was when I received a telegram at midnight saying, "Madame Depage drowned in the *Lusitania*. Find Depage in one of the hotels in the Strand and send him to Cork by the mail." A few weeks before she had spent the evening with us, confessing that she was going with a sinking heart to beg funds for the Belgian Red Cross, for she had never spoken on a platform. Her appeal proved satisfactory in the highest degree, and her devoted British friends afterwards subscribed generously towards a memorial for her. Working hand in hand, Dr. and Madame Depage were perhaps mainly responsible for the noticeable improvement in the standard of Belgian nursing which has taken place during the last thirty years. With this object in view Miss Cavell was invited in 1900 to leave England and take charge of his nursing home in Brussels. She accepted the invitation, worked splendidly, raised it to a high pitch of efficiency, and was in sole control from the beginning of the war until the civilized world was shocked to hear that she had been tried and shot as a spy by the Germans. A first-rate organizer, the great war found Depage already skilled in the work of a military hospital, for he had established a Belgian Red Cross hospital at Constantinople during the Balkan war. In Brussels his surgical clinic had long been conducted on the best modern lines. In 1920 his services to surgery were recognized by his election as a corresponding Fellow of the Académie de Médecine in Paris and by an honorary Fellowship of the Royal College of Surgeons of England, whilst his countrymen elected him to the distinguished position of president of the Faculty of Medicine in the University of Brussels, where he had long held the position of professor of pathology and clinical surgery.

THOMAS STEVENSON, M.D.ED.,

LIEUT.-COLONEL R.A.M.C.T.(ret.),

Senior Surgeon, St. Paul's Eye Hospital, Liverpool.

THE death of Dr. Stevenson came as a great shock to his friends and colleagues, who thought he was in his usual good health and spirits. The end came suddenly on June 7th at Dyserth, where he was spending the week-end at his country house. Dr. Stevenson's career was devoted to ophthalmology, and for over thirty years he had practised the specialty with success. He studied medicine at the University of Edinburgh, graduated M.B., C.M. in 1886, and M.D. in 1912. He settled in private practice in Liverpool. His opportunity for becoming an ophthalmologist came when he obtained the appointment of assistant surgeon to St. Paul's Eye Hospital. There he came under the influence of the late Dr. George Walker, and by his assiduity laid the foundation of a sound knowledge of diseases of the eye, which established his reputation as an oculist. An ardent Volunteer, he early joined the local volunteer medical corps, and during the great war served as lieutenant-colonel with the medical forces in France. On his return he became the senior surgeon to the hospital, and was in active practice up to the end.

Dr. Thomas Stevenson was a man of engaging personality, a loyal colleague, and staunch friend. Considerate towards his patients, no trouble was too great, and he passed many hours in the service of the hospital. As an army medical officer no one could have been more thoughtful of his men. A memorial service was held on June 13th in the Lady Chapel of the Liverpool Cathedral. There was a representative gathering of his colleagues on the staff of St. Paul's Hospital and of many friends and patients to do honour to the memory of one who had earned their esteem and affectionate regard. The tribute paid to him by the canon-in-residence was much appreciated by those present. It set forth the character of the man as he was known to all with whom he came in contact. Dr. Stevenson will be much missed by his colleagues, and not least for his affability and sincerity of purpose. He leaves a widow, with whom we desire to express our sympathy in the untimely loss of one who had endeared himself to so many.

We regret to record the death of Dr. JAMES CAMERON at the age of 55, after a long and painful illness. He received his medical education at Edinburgh, where he obtained the diplomas of L.R.C.P. and S.Ed. and L.R.F.P.S.Glas. in 1894. In 1895 he began practice at Loanhead, Midlothian, and married the daughter of Dr. Gilmour, for many years provost of Linlithgow. A colleague writes: Dr. Cameron was a genial, large-hearted personality, a staunch and loyal friend to his colleagues, and very popular with his patients. He had many activities outside his profession, being a keen and well known curler, a prominent Freemason in Midlothian and Edinburgh circles, and chairman of the local Unionist association. He took great interest in educational matters, being for many years a member of the parochial school board, and later a member of the education authority. He was a member of both the Midlothian and Edinburgh Panel Committees, and also of the County Insurance Committee. He was a chairman of the Lothians Division of the British Medical Association, and in recent years attended regularly the Annual Meetings of the Association. He was a major in the Territorial Division, R.A.M.C., and had a long connexion with the Lothian and Border Yeomanry. His vigorous presence and business capacity will be sadly missed by his colleagues. His two sons had died previously, one being killed in aerial warfare in France.

His many friends in Shropshire have seen with deep regret the announcement of Dr. JUSTIN MCCALLUM MCCARTHY'S death at Margate. Dr. McCarthy received his medical education at Aberdeen and Guy's Hospital; he obtained the diplomas M.R.C.S. and L.S.A. in 1876, and graduated M.D.Durham in 1898. A colleague writes: Dr. McCarthy commenced practice at St. George's, Shropshire, nearly fifty years ago, and for many years was one of the leading practitioners in the county. He was president of the Shropshire and Mid-Wales Branch of the British Medical Association for the year 1894-95, and president of the Midland Medical Society for the year 1907-08. He was a very sound and successful practitioner, beloved of his patients and most popular throughout the county; but it is for his public work, particularly in public health and education, that he will be mostly remembered. Dr. McCarthy entered the Salop County Council in 1892, and was elected chairman of the Public Health Committee in 1902, a post he held for twenty-one years. He devoted all the time that he could spare from a large and laborious practice to building up a real public health service for the county. His enthusiasm for "health" and his sympathy with the poor made this a labour of love. He was a justice of the peace for the county, and was made an alderman of the county council in 1906. In addition to many other posts that he held, he was chairman of the Shropshire Association for the Prevention of Consumption. When he retired from practice about twelve months ago on account of ill health, and left Shropshire to live in the South of England, his loss was felt very acutely throughout the whole county. Dr. McCarthy was a cousin of Justin McCarthy, the author and Irish leader. He leaves a widow, with whom much sympathy is felt.

We regret to announce the death of JOHN FERGUSON CARRUTHERS. He was the eldest son of Mr. Walter Carruthers of Inverness, and a grandson of Robert Carruthers, LL.D. At 14 years of age he won a scholarship at Fettes College, Edinburgh. He was successful both in work and in games, winning prizes in sport at Fettes

and becoming a good cricketer. He received his medical education in Edinburgh, where he graduated M.B., C.M. in 1892. After an adventurous career in many parts of the world, Carruthers took the degree of M.D. with honours in Edinburgh in 1897. He practised for several years at Revelstoke in British Columbia, where he was medical officer of health. From 1903-05 he studied at Moorfields Eye Hospital, and then took up ophthalmic practice at St. Peter Port, Guernsey. Soon after the outbreak of the war he was appointed ophthalmic specialist at the Royal Herbert Hospital, Woolwich, where he remained until 1922. His duties in this post were extremely arduous, and it cannot be doubted that his unremitting work undermined his health. In 1922 he was appointed ophthalmic specialist at Baghdad in the R.A.F. with the rank of squadron leader, but did not take up the post, and shortly afterwards retired. He married a daughter of Mr. W. Scott of Edinburgh, who survives him.

The death occurred on June 13th of a veteran practitioner, Dr. EDWYN J. SLADE-KING, who had reached the age of 95. He received his education at Edinburgh, London, and Paris, and graduated M.D.Edin. in 1853; he took the diplomas of M.R.C.S.Eng. in 1854, L.R.C.P.Lond. in 1858, and D.P.H.R.C.P.Edin. in 1876. He was a member of the council of the Royal Sanitary Institute, was president of the South-Western Branch of the British Medical Association in 1890, and a Fellow of the Society of Medical Officers of Health. For nearly sixty years Dr. Slade-King was medical officer of health for Ilfracombe, but owing to his advanced age had to relinquish that position in December last, when he was one of the oldest, if not the oldest, medical officer of health in the country. For many years he was the county coroner. In December last he also resigned the office of medical officer of health under the Torrington and Dulverton Rural District Councils. Dr. Slade-King served for eighteen years on the Devon County Council, and when he decided not to seek re-election in 1922 he was co-opted a member of the Devon Education Committee.

The deaths are reported of the following well known foreign medical men: Dr. CLARO HOMEM DE MELLO of Sao Paulo, the Brazilian statesman and psychiatrist; Dr. ALBERT REMY, the French ophthalmologist and inventor of the diploscope; Professor BATTISTA GRASSI of Rome, the malariologist and one of the leading biologists of the day; and Professor GIROLAMO DACCOMO, a well known pharmacologist of Modena.

Medico-Legal.

DIAGNOSIS OF DISLOCATION.

SALTER AND SWIFT, JJ., sitting in the King's Bench Divisional Court on June 17th, allowed the appeal of Dr. Robert Leeming, medical officer to the Kendal Board of Guardians, from a judgement of Judge Chapman delivered at Great Grimsby County Court on February 18th, mulcting Dr. Leeming in £1,800 damages for negligence in failing to diagnose the dislocation of the left hip-joint of George Freeborn, formerly a travelling ganger, of Scunthorpe.

The hearing of the case in the county court was reported in the BRITISH MEDICAL JOURNAL of March 14th. Dr. Leeming pleaded (*inter alia*) the protection of the Public Authorities Protection Act, 1893, Section 1 (*a*), which provides:

"The action . . . shall not lie or be instituted unless it is commenced within six months next after the act, neglect, or default complained of, or, in case of a continuance of injury or damage, within six months next after the ceasing thereof."

The plaintiff issued his writ on April 25th, 1924, six months and ten days after he left the defendant's care—that is, October 15th, 1923; but the county court judge held that no cause of action arose till damage occurred, that in this case damage occurred after November 1st, 1923, and that therefore the action was started within the six months.

Salter, J., in a judgement, in which Swift, J., concurred, said it might well be that by the time the cause of action accrued it was too late to sue, but the Legislature had deliberately passed this Act for the protection of public officials, even when they had been guilty of negligence. He could not agree with the county court judge that no damage accrued for several weeks after October 15th, 1923. He thought the damage began to accrue from the time when the doctor ought to have discovered the dislocation, which was some time before October 15th, 1923.

Leave to appeal was given.

Medical News.

A MEETING of the Tuberculosis Society of Scotland will be held at the Scottish House of the British Medical Association, 6, Drumsheugh Gardens, Edinburgh, on Thursday, July 9th, at 4.30 p.m., when Professor Holger Moellgaard and Professor Knud Faber of Copenhagen will speak on the sanocrysin (gold) treatment of tuberculosis.

AT the annual summer meeting of the Institution of Heating and Ventilating Engineers, held last week at Birmingham, Mr. Herbert G. Cathcart read a paper on hot-water installations for large hospitals, founded on his experience with the Metropolitan Asylums Board. He stated that 2,800 to 3,000 tons of coal were consumed annually in many hospitals for steam raising alone, besides 500 to 850 tons for other purposes. It was necessary, therefore, to give careful consideration in designing plants, which should be centralized. There should be ample capacity for storage of hot water, and spare or stand-by plant should be provided where a breakdown would cause the stoppage of a large part of the essential services. It was desirable to have suitable recording apparatus to furnish a record of the fluctuations in temperature and a reliable meter to register the total consumption of hot water, so as to have complete evidence of the running of the plant, and the shortcomings of the staff. He exhibited a number of graphs, taken from installations of the Metropolitan Asylums Board, showing the hourly consumption of hot water over the twenty-four hours of the day, both Sundays and weekdays, which afforded interesting information as to where the hot water was used, and of the times and quantities drawn off.

THE Johnston-Lavis Geophysical Collection, bequeathed by the late Dr. Henry James Johnston-Lavis, student of University College, London, and afterwards in practice for some years in Naples, was formally opened by Sir Henry A. Miers, Vice-Chancellor of the University of Manchester, at a meeting in University College on Thursday last.

THE Fellowship of Medicine announces that on Friday, July 3rd, at 5.30 p.m., Sir John Thomson-Walker will give a lecture, open to all members of the medical profession, on urinary infections, in the West Lecture Hall of the Royal Society of Medicine. A four weeks' course in urology, beginning on June 29th, will be held at St. Peter's Hospital. The second week of the practitioners' course at the London Temperance Hospital begins on June 29th. The special courses to be given during July include one for a fortnight, starting on July 6th, in children's diseases, at the Queen's Hospital for Children, and a three weeks' course in neurology at the West End Hospital for Nervous Diseases. A fortnight's course, beginning on August 4th, in general medicine, surgery, and the special departments, will be given at the Prince of Wales's General Hospital. Starting on the same date, the All Saints' Hospital will give a month's course of instruction in urology. From August 24th to September 5th the Queen Mary's Hospital, Stratford, will hold an intensive course in medicine, surgery, and the special departments. Copies of the syllabuses and the programme of the Fellowship of Medicine may be obtained from the Secretary at 1, Wimpole Street, W.1.

THE annual general meeting of the West London Medico-Chirurgical Society will be held at 5 o'clock on Friday, July 10th, at the West London Hospital, Hammersmith, W.

THE fourth Annual Conference on Cremation, arranged by the Federation of Cremation Authorities, will be held in the Conference Hall, British Empire Exhibition, Wembley, at 3 p.m., on Wednesday, July 1st.

THE Council of Epsom College will shortly elect two girls to St. Anne's Home Scholarships of £48 a year. Candidates must be fully 7 years of age and not over 12 and must be necessitous orphan daughters of medical men who had been for not less than five years in independent practice in England or Wales. Application must be made on a form to be obtained from the Secretary, 49, Bedford Square, W.C.1, by July 7th.

THE eighteenth concert of Hospital-Trained Ex-Service Men's Choirs will be held at the Chelsea Polytechnic, King's Road, S.W., on Saturday, July 4th, at 3 p.m.

AN advanced course in oto-rhino-laryngology will be held at the Toulouse Faculty of Medicine, under the direction of Dr. Escat, from July 6th to 13th. The course is open to French and foreign medical practitioners and students at a fee of 150 francs. Further information can be obtained from Dr. Vaquier, Hospice de la Grave, Toulouse.

DR. PERCY B. SPURGIN, who is honorary secretary of the Marylebone Division of the British Medical Association, has been appointed President of the Metropolitan Police Surgeons' Association for 1925-26.

THE second Imperial Entomological Conference, which began on June 9th, concluded its proceedings on June 18th, when the delegates of certain dominions, colonies, and dependencies who had attended it were entertained at dinner by the Government. The Secretary of State for the Colonies, who was in the chair, in proposing a toast, congratulated them on the success of the conference. He believed that the Governments of all nations, and not least the British Government, were beginning to realize the importance of such questions as the prevalence of diseases due to mosquitos, of trypanosomiasis, and of weevil in the cotton fields. He appealed to men of business in all parts of the British Empire to give attention to the matter and establish their own entomological staffs, but a comprehensive scheme of research and administration action was needed for the whole of the British Dominions. Mr. A. Gibson (Canada) praised the work of the Imperial Entomological Bureau.

Dr. G. E. BROOKE, chief health officer, Singapore, has been elected a life Fellow of the Royal Sanitary Institute. Dr. Robert Dick (Department of Public Health, Sydney, New South Wales), Dr. Duncan Forbes (M.O.H. Brighton), Dr. W. C. Laidlaw (Alberta, Canada), and Dr. E. C. Williams (County M.O.H. Glamorgan) have been elected Fellows.

A MONUMENT, consisting of a bas-relief by the sculptor Raoul Bénard, in honour of the 500 French doctors and medical students who lost their lives during the war, was unveiled on June 14th, at the Paris Faculty of Medicine, in the presence of the President of the French Republic, the Dean of the Faculty of Medicine, and a large and distinguished audience.

THE ninth congress of the Swiss Society of Dermatology will be held at Zürich on July 4th and 5th.

DR. COSTANTINI has been nominated professor of clinical surgery, Dr. Leblanc professor of anatomy, and Dr. Pinoy professor of natural history and parasitology in the Algiers Faculty of Medicine.

A CONGRESS, convened by the International Council of Nurses, is to be held in Helsingfors, Finland, under the presidency of the Baroness Sophie Mannerheim, President of the International Council of Nurses, and matron of the Surgical Hospital, Helsingfors, commencing on July 20th.

MESSRS. J. and A. CHURCHILL announce for early publication *The Diabetic Life, Its Control by Diet and Insulin*, by Dr. R. D. Lawrence, Chemical Pathologist, King's College Hospital.

A VACATION course will be given at the Clinique Maritime, Coq-sur-Mer, Belgium, by Dr. Delchef, assisted by Drs. Wettendorff (Middelkerke) and Ledent (Liège), from August 17th to 22nd. It will deal chiefly with the treatment of tuberculous disease of the bones and joints by surgical means, and by sea air and heliotherapy. The fee will be 100 francs, and full particulars can be obtained from Dr. Delchef, 38, Rue Stévin, Brussels.

THE seventeenth congress of the Italian Phreniatric Society will be held at Trieste, under the presidency of Dr. G. Pastrovich, from September 24th to 27th, when the following papers will be read: Constitution in psychiatry, by Drs. M. Koblinsky and G. Vidoni of Gonoa; psychiatry and psychoanalysis, by Dr. E. Weiss of Trieste; treatment of general paralysis, by Drs. N. de Paoli and Mondini of Ancona.

THE sixth congress of the Far Eastern Association of Tropical Medicine will be held at Tokyo from October 18th to November 7th. October 18th to 25th will be devoted to scientific meetings, and the 26th to sight-seeing in Tokyo. On the 27th there will be an excursion to Kamakoera, from the 28th to November 1st to Nikko, Hakone, and Kyoto, and from the 1st to the 7th to Nara and Osaka. Further information can be obtained from the general secretary, Dr. O. Beggelen, Weltevreden.

THE second German Congress of Orthopaedics will be held at Hanover, under the presidency of Dr. Bade of Hanover, from September 14th to 16th, and will be followed by a visit to the watering places on the North Sea. The chief subjects for discussion at the congress are: development of bone, by Dr. Stoffel of Mannheim; disturbances in growth, by Dr. Murk Jansen of Leyden; and the physiology of bone, by Dr. Müller of Munich.

A POST-GRADUATE course will be held in Berlin, with the active participation of the Faculty of Medicine, next October. It will include lectures and demonstrations on general medicine, and a special course for ophthalmologists. Full particulars can be obtained on application to the Office of the International Post-Graduate Courses, Luisenplatz 2-4, Berlin, N.W.6.

A COMMITTEE has been formed to erect a monument to commemorate the late Professor Paul Delbet. Subscriptions should be sent to M. Prunet, 104, Avenue Ledru-Rollin, M. Thomas, 44, Rue Boileau, or M. Bellanger, 2, Rue Pigalle, Paris.

PROFESSOR SABRAZÈS has succeeded the late Professor Bergonié as director of the regional centre of Bordeaux and the south-west of France for combating cancer.

DR. C. M. CORTEZO of Madrid has been nominated President of the State Council of Spain. This is the first time that this post has been held by a medical man.

DURING the international exhibition at Grenoble in October a medical congress will be held. Dr. Dupuy de Frenelle of Paris has been nominated president of the section of medicine; Dr. Delort of Paris, president of the section of gastro-enterology; and Dr. Roux-Delmal, president of the section of French and foreign medical journals.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

QUERIES AND ANSWERS.

LABIAL AND CERVICAL WARTS.

DR. MANASSEH (Friends' Hospital, Brummana, Beyrouth, Syria) asks for advice on the small cauliflower growths, very much like ordinary warts, dotted all over the inner and outer sides of labia minora and majora. The woman is about 60 years of age; the blood gave a negative Wassermann reaction. There is no history of gonorrhoea. The cervix presents one or two of these small warty growths, but is otherwise normal in appearance. He has in turn applied strong nitric acid, acetic acid, thermo-cautery, silver nitrate, carbolic acid, scraping the surface before cauterizing, antiseptic douches, etc., but has not obtained a permanent cure.

STREPTOCOCCAL INFECTION OF TONGUE.

"PERPLEXED" has a patient who for six months has suffered from chronic streptococcal infection of the tongue, which is furred, dry, and fissured. He asks for advice in treatment. The teeth have been *x*-rayed and any doubtful ones removed. Other sources of local reinforcement for the infection have been excluded. Autogenous vaccines, mouth-washes, and antiseptic lozenges have been persevered with. Great attention has been paid to the general health and special care has been taken to avoid any irritating article of diet.

INCOME TAX.

Replacement of Car and Change of Practice.

"V. F." made a claim in respect of the cost of replacing his car and "received one-third of the rebate this year." He has now left that practice and is told that he must lose the remaining two-thirds of the rebate allowed him.

*** The cost of replacing a car is deductible as a professional expense—that is, it falls to be treated in the same way as, for instance, the payment of a locumtenent. The result is to reduce the profits of the year in which the expense is incurred. Where the practitioner remains in the same practice during the three following years he receives a full allowance, spread out, so to speak, over that period. If, however, he leaves the practice, the benefit of the deduction accrues to the practitioner who takes it over, for that part of the three years which is still affected by the profits of the year which were reduced by the deduction. The result is perhaps not equitable as between the vendor of a practice and the purchaser, but is only more marked in degree than normally happens in connexion with other fluctuating

receipts and expenses whenever a business or practice changes hands. It is a consequence of the principle that the three years' average adheres to the business or practice, and not to the earnings of the individual.

LETTERS, NOTES, ETC.

A LONG SOJOURN.

MR. V. P. NORMAN, F.R.C.S. (Bradford), writes: The following case of foreign body in the rectum is of some interest on account of the long time (seven months) before it was expelled, and the absence of any discomfort for several months. A married woman, aged 38, was operated on for a uterine fibroid in October, 1924. She was discharged from hospital on November 1st perfectly well, and remained so until last March, when she began to have increasing constipation and a sensation of fullness in the rectum. The constipation increased until, on May 19th, her bowels ceased to act, in spite of large doses of castor oil and Epsom salts. Feeling something protruding from the anus, she grasped it with her fingers and with difficulty removed a sodden inspissated piece of gauze, 8 in. long, 4 in. wide, and about 1 in. thick.

SPUTUM EXAMINATION BY THE COLOUR BLIND.

DR. E. W. BOWELL (South Norwood) writes: Dr. Constance Steele (BRITISH MEDICAL JOURNAL, June 6th, p. 1064) recommends a special method of staining sputum slides in order to make the tubercle bacilli evident to a colour-blind observer. This may, however, be managed more simply if the slide is stained in the ordinary way and examined with a suitable colour screen. The Wratten No. 45 shows (to a normal observer) the fuchsin-stained organisms of a deep black colour, while the prominence of the other (blue-stained) structures is diminished. The colour-blind observer will probably see exactly the same. The colour screen may be obtained enclosed between circular glasses of a size which will fit the substage diaphragm carrier. To try the effect a piece of the coloured gelatine (to be obtained for a few pence) will serve quite well. No glass screen that I have tried has so good an effect; the reason for this is evident when the glass and the coloured gelatine are examined with a hand spectroscope. I refrain from further details, as the No. 45 screen is easily obtainable and answers the purpose.

MULTIPLE INFECTION BY TAENIA.

DR. W. FYFFE DORWARD (St. Luke's Hospital, Haifa) writes: On January 6th, 1925, a Bedouin, aged 40, attended the out-patient department complaining of epigastric pains and constipation. He stated that he had had slight intermittent pains in the stomach for several years, always worst during the night, but only recently had they become severe. For several weeks the pain had recurred frequently, and, when severe, spread upwards into the chest. He had occasional attacks of heartburn, and on several days previously had induced vomiting to relieve it. The bowels were opened with difficulty every second day. The patient was a sparely built man, 5 ft. 6 in. in height, and weighed (clothed) 8 st. 2 lb. He was very thin and slightly jaundiced. The tongue, large and flabby, was indented and coated with yellow fur. The spleen was much enlarged (2½ fingerbreadths below the costal margin) and the liver slightly (1 fingerbreadth below the normal lower level). Peristalsis was very active and readily seen through the thin abdominal walls. Palpation revealed indistinct soft masses, evidently faecal accumulations. Further questioning secured the information (withheld previously as too common to mention) that he had had chronic malaria for years, and had frequently observed tapeworm in his stools. He was admitted that day and treated with ext. filicis liq. next day. The worm passed looked unusually large, and on careful search *sixteen* heads of *Taenia mediocanellata* were found. Unfortunately the total length of worms passed was not measured, as the presence of so many parasites was not suspected. The following day the patient felt so much improved, and was so completely free from pain, that he refused to stay longer in hospital, so that it was impossible to observe whether the gastro-intestinal symptoms were permanently relieved or not.

SLEEPLESSNESS.

"F. G. G." writes to express the view that many cases of insomnia at and after middle age are due to the increased blood pressure associated with advancing years, and states that he has frequently found a dose of calomel (2-3 grains), followed by a saline aperient next morning before breakfast, to bring about a cessation of the trouble, at any rate for a time, by reducing blood pressure. The dose can be repeated—if and when required. I never, he adds, think of hypnotic drugs in these cases.

LIEUT.-COLONEL E. C. C. MAUNSELL, I.M.S.(ret.) (Ealing), writes: Lieut.-Colonel Reinhold, I.M.S. (June 6th, p. 1064), refers to the possibility of adulterated coffee causing insomnia. I served for some time in a coffee-growing district in India, and among the planters and their wives I found some, like myself, who were unable to drink coffee at night, black or otherwise, on account of a certain amount of insomnia produced. There no question of adulteration arose; it was the berry, and nothing more than the berry.

OVERCLOTHING OF CHILDREN.

DR. MARION E. MACKENZIE (Leeds) writes: With regard to the influence of clothing on health, I was interested to find, in judging a "health competition" for children recently, the marked effect of overclothing, apparently resulting in poorly developed chests and very feeble breathing. Where the chests were badly developed but the clothing light, it seemed to me that the breathing was not nearly so feeble. According to Sir Robert Philip's teaching, poor expansion with feeble breathing is a very serious matter in predisposing to phthisis, and therefore it is important that school children should not be overclad. Most of the girls examined wore "Liberty bodices," originally designed to give greater freedom by serving the place of braces and discarding the voluminous skirts. These, however, in most girls, except some of the babies and toddlers (who, by the way, were much more sensibly dressed), were still used, the "Liberty" bodice being only an added encumbrance. Most of the children had splendidly developed legs but poorly developed chests. I was particularly struck with one beautiful child till I saw her chest: her teeth excellent, legs perfectly moulded and firm, but her breathing was so feeble I had to disqualify her. She had seven layers of clothes! The good development of the legs I put down to their freedom from clothes; all the children wore socks, not long stockings. What has been proved good in the sunlight treatment of tuberculosis should surely be good in its prevention, and with all due deference to Dr. Poynton (JOURNAL, June 6th, p. 1059) I can hardly support his view that because some girls get cyanosed legs all girls should be "stuffy old Victorians," any more than it is reasonable to doubt the healthfulness of a cold bath because some people cannot stand it. But I understand he does not expect us to be reasonable. "I can give you an argument, but I cannot give you an understanding," he says in effect! May I dare to criticize men's clothing, especially on a hot June day: is it reasonable? Might not medical men reform it if only for the sake of the discomfort it gives us to look at them in this weather?

SYNCHYSIS SCINTILLANS.

DR. J. BARKER SMITH, L.R.C.P. (London, S.E.), writes: As I am able to watch the cholesterol particles in my eyes experiencing the degeneration of the vitreous humour associated with the above condition, I think I am able to confirm the fact of cholesterol taking on other properties when exposed to forms of light; also to contribute a link with respect to the equivalents of stimulation acting upon cholesterol particles. In a short letter which appeared in the BRITISH MEDICAL JOURNAL, April 5th, 1924 (p. 652), dealing with this subject of scintillating particles (cholesterol) in the eyes, I described two movements—one, movements in the lymph, floating movements; the other, darting movements—the latter determined by certain stimulants, notably tea, also by exercises in the open sunlight, and by a rod of arc carbon held in the hand. The effects of the arc carbon on my electric measurements were also determined by a galvanometer away from electric installations, before and whilst holding such rod of arc carbon. I would suggest, then, that what I am witnessing in the eye is taking place throughout my whole body, and that the luminous particles which Mr. C. H. Collings described, and which ultramicroscopists have found in all vegetable and animal cells, may be cholesterol, and that cholesterol, with its high percentage of carbon (more than 80 per cent.), may act as the rod of arc carbon in our economy. I mean by equivalents of stimulation, such as you have discussed in your leading article May 30th, 1925, with respect to anti-rachitic factors.

MEDICAL GOLF.

A MATCH was held at Moor Park Club, Rickmansworth, on June 2nd, between the Medical Golfing Society "A" team and the British Dental Association Golfing Society "A" team. The match was keenly contested and ended in favour of the Dental Golfing Society, who won by 10½ points to 9½. The outstanding feature of the match was the morning round played by Mr. H. E. Warren Williams against Dr. H. A. Watney. Mr. Warren Williams went round in 73 (38 out and 35 home), the bogey for the course being 78.

THE summer meeting of the Shropshire Medical Golf Association was held on the Church Stretton links on June 7th. The following are the results:

Captain's Prize (presented by Dr. George Higginson, Church Stretton), *eighteen holes medal play.*—Dr. Beckett, 87−13=74; Dr. Urwick, 90−15=75; Dr. Richardson, 89−12=77; Dr. Crofton, 93−16=77; Dr. Ireland, 88−10=78; Mr. Bradford, 91−13=78; Dr. Elliott, 88−9=79; Dr. Lawrence, 91−12=79.

Foursomes v. Bogey.—Drs. Haydon and Clarke=1 down. Drs. Anderson and Urwick=2 down. Drs. Higginson and Elliott=4 down. (Twenty-six entries.)

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35, 36, 37, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 38 and 39.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 295.